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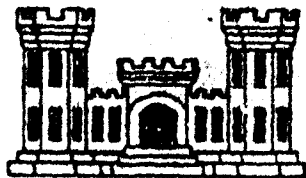
SUSQUEHANNA RIVER BASIN

7

FINCH HOLLOW WATERSHED PROJECT
SITE 3C

BROOME COUNTY, NEW YORK
INVENTORY NO. N.Y. 724

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM



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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
	AD-A096282	
4. TITLE (and Subtitle) Phase I Inspection Report Finch Hollow Watershed Project Site 3C Susquehanna River Basin, Broome County, NY Inventory No. NY 724		5. TYPE OF REPORT & PERIOD COVERED Phase I Inspection Report National Dam Safety Program
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) (10) George/Koch P.E. (11) 11/1/80		8. CONTRACT OR GRANT NUMBER(s) (15) DACW-51-79-C-0001
9. PERFORMING ORGANIZATION NAME AND ADDRESS New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233 (12) 786		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS New York State Department of Environmental Con- servation/ 50 Wolf Road Albany, New York 12233		12. REPORT DATE 21 May 1980
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Department of the Army 26 Federal Plaza/ New York District, CofE New York, New York 10007		13. NUMBER OF PAGES
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; Distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) (6) National Dam Safety Program, Finch Hollow Watershed Project Site 3C (Inventory Number		
18. SUPPLEMENTARY NOTES NY 724), Susquehanna River Basin, Broome County, New York, Phase I Inspection Report.		
19. KEY WORDS (Continue on reverse side if necessary, and identify by block number) Dam Safety National Dam Safety Program Visual Inspection Hydrology, Structural Stability Finch Hollow Watershed Project Site 3C Broome County Binghamton		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. → p. iv The examination of documents and visual inspection of the Finch Hollow Site 3C Dam did not reveal conditions which constitute a hazard to human life or property. The total discharge capacity of the spillways is adequate to impound and safely discharge the floodwaters resulting from the Probable Maximum Flood (PMF).		

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to assure the continued satisfactory performance of this structure, a schedule of periodic maintenance should be established. In addition, an emergency action plan for notification of downstream residents should be developed within 6 months of the date of notification of the project.

PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the Spillway Test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative spillway capacity and serves as an aide in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

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PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
FINCH HOLLOW WATERSHED PROJECT SITE 3C
I.D. No. NY 724
SUSQUEHANNA RIVER BASIN
BROOME COUNTY, NEW YORK

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PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

Name of Dam: Finch Hollow, Little Choconut &
Trout Brook Watershed Project
Site 3C I.D. No. NY 724

State Located: New York

County Located: Broome

Watershed: Susquehanna

Date of Inspection: November 8, 1979

ASSESSMENT

→ The examination of documents and visual inspection of the Finch Hollow Site 3C Dam did not reveal conditions which constitute a hazard to human life or property.

The total discharge capacity of the spillways is adequate to impound and safely discharge the floodwaters resulting from the Probable Maximum Flood (PMF).

To assure the continued satisfactory performance of this structure, a schedule of periodic maintenance should be established. In addition, an emergency action plan for notification of downstream residents should be developed within 6 months of the date of notification of the owner.

George Koch

George Koch
Chief, Dam Safety Section
New York State Department
of Environmental Conservation
NY License No. 45937

Clark H. Benn

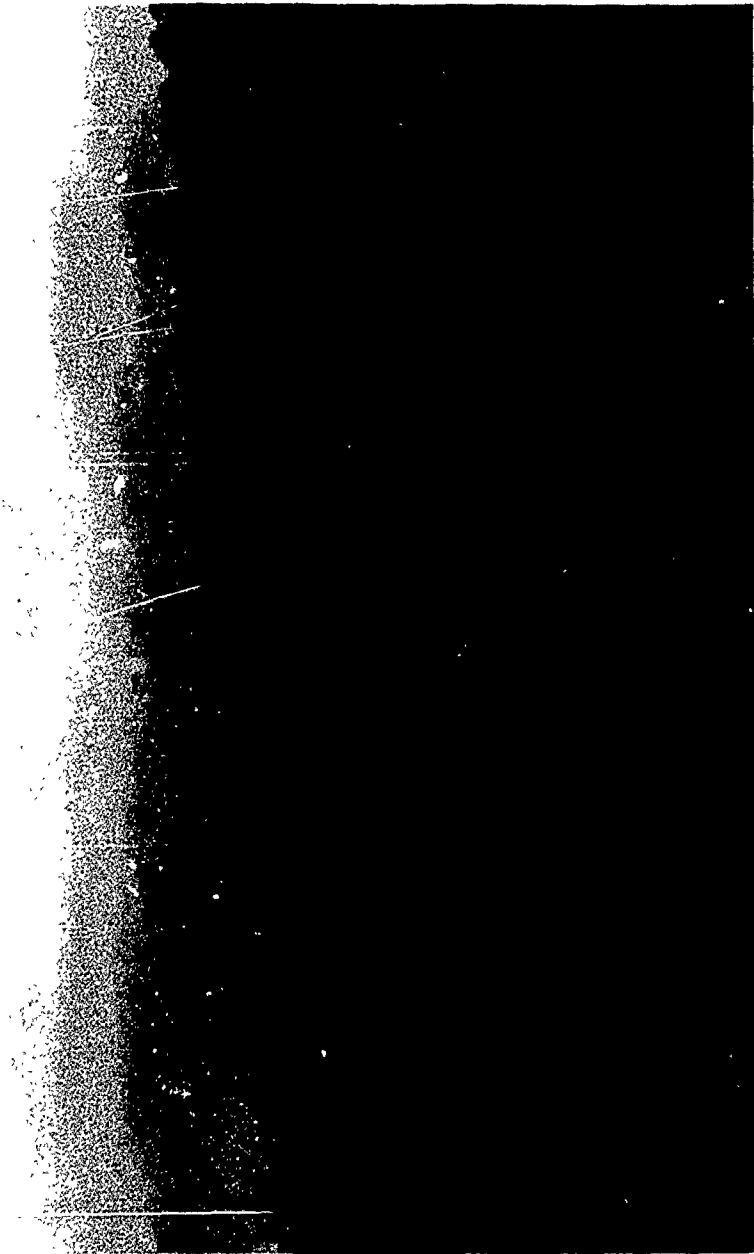
Col. Clark H. Benn
New York District Engineer

Approved By:

Date:

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OVERVIEW
FINCH HOLLOW WATERSHED PROJECT
SITE 3C
I.D. No. NY 724

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
FINCH HOLLOW, LITTLE CHOCONUT, & TROUT BROOK WATERSHED PROJECT
SITE 3C
I.D. No. NY 724
(#96C-3445)
SUSQUEHANNA RIVER BASIN
BROOME COUNTY, NEW YORK

SECTION 1: PROJECT INFORMATION

1.1 GENERAL

a. Authority

The Phase I inspection reported herein was authorized by the Department of the Army, New York District, Corps of Engineers, to fulfill the requirements of the National Dam Inspection Act, Public Law 92-367.

b. Purpose of Inspection

This inspection was conducted to evaluate the existing conditions of the dam, to identify deficiencies and hazardous conditions, to determine if these deficiencies constitute hazards to life and property, and to recommend remedial measures where required.

1.2 DESCRIPTION OF PROJECT

a. Description of Dam

The Finch Hollow Watershed Project Site 3C consists of an earth dam with a service spillway pipe passing through the embankment and an excavated auxiliary spillway passing around the northern end of the dam.

The dam consists of a compacted earth embankment which is 54 feet high, has a crest length of 590 feet, and a crest width of 14 feet. The upstream slope is a 1 vertical on 3 horizontal with a 10 foot wide berm near the base of the slope. The downstream slope is a 1 vertical on 2.5 horizontal. The crest and exposed slopes are covered with grass and crownvetch. An earth cutoff trench of varying depth and width keys the embankment into the foundation soils.

The principal spillway consists of a rectangular concrete drop inlet structure and a 30 inch diameter reinforced concrete pipe with anti-seepage collars. A reservoir drain consisting of a 6 inch diameter corrugated metal pipe extends from the upstream toe of the embankment to the base of the principal spillway riser. A vertical slide gate mechanism mounted along the inside of the riser controls the flow through the reservoir drain. The auxiliary spillway is in an earth cut with a bottom width of 100 feet.

An internal drainage system consisting of a gravel and sand filter is located at the base of the embankment near the downstream toe. Seepage is conducted through this drain to beyond the toe of the embankment.

b. Location

Finch Hollow Watershed Project Site 3C Dam is located approximately one third mile north of New York Route 17. A portion of the Ely Park Golf

Course is adjacent to the impoundment. The dam is in the City of Binghamton, New York.

c. Size Classification

The dam is 54 feet high and has a maximum storage capacity of 51 acre-feet. Therefore, the dam is in the intermediate size category as defined by the Recommended Guidelines for Safety Inspection of Dams.

d. Hazard Classification

The dam is classified as "high" hazard due to the presence of a number of homes and commercial establishments in the city of Binghamton as well as Route 17 downstream of the dam.

e. Ownership

The dam is owned by the County of Broome, New York. The contracting office representative is Charles Kark. His phone number is (607)772-2114.

f. Purpose of Dam

The dam is a floodwater retarding structure.

g. Design and Construction History

The dam was designed by the U.S. Department of Agriculture, Soil Conservation Service (SCS). The SCS office at the Broome County Airport has a design folder containing hydrologic, hydraulic and structural design information, in addition to the as-built plans and contract documents.

h. Normal Operating Procedures

Normal flows are discharged through the principal spillway. This structure has sufficient capacity to store and discharge a 100 year flood without discharge occurring in the auxiliary spillway. For storms in excess of the 100 year flood, discharge through the auxiliary spillway can be expected.

1.3 PERTINENT DATA

<u>a. Drainage Area (acres)</u>	198
<u>b. Discharge at Dam (cfs)</u>	
Principal spillway at maximum high water	23
Principal spillway at auxiliary spillway crest elevation	22
Auxiliary spillway at maximum high water	3187
Reservoir drain @ principal spillway crest ele.	6
<u>c. Elevation (USGS Datum)</u>	
Top of Dam	1156.2
Auxiliary Spillway Crest	1151.0
Principal Spillway Crest	1129.8
Reservoir Drain, invert elevation	1119.0
<u>d. Reservoir Surface Area (acres)</u>	
Top of dam	4.2
Auxiliary Spillway Crest	3.65
Principal Spillway Crest	0.97

e. Storage Capacity (acre-feet)

Top of dam	61.0
Auxiliary Spillway Crest	39.4
Principal Spillway Crest	4.5

f. Dam

Embankment type - A homogeneous, compacted earth fill with a keyed earth cut-off trench and drain parallel to axis of dam.

Embankment length (ft)	590
Slopes Upstream	1 vertical on 3 horizontal
Downstream	1 vertical on 2.5 horizontal
Crest width (ft)	14

g. Principal Spillway

Type: Ungaged, reinforced concrete drop inlet (2.5 x 2.5 ft), rising 10.8 feet above the invert of the 30 inch diameter concrete conduit; length of conduit 224 feet

Weir length (ft)	0.92
------------------	------

h. Auxiliary Spillway

Type: Channel cut into earth with trapezoidal cross section.

Bottom Width (ft)	100
Side Slopes (V:H)	South Side 1:3
	North Side 1:2.5
Length of level section (ft)	30
Exit Slope (ft/ft)	0.025

i. Reservoir Drain

Type: 6 inch diameter corrugated metal pipe

Control: Manually operated vertical slide gate mounted along the inside of the principal spillway riser.

SECTION 2: ENGINEERING DATA

2.1 GEOTECHNICAL DATA

a. Geology

The Finch Hollow Watershed Project Site 3E Dam is located in the glaciated portion of the Appalachian uplands (northern extreme of the Appalachian Plateau) physiographic province of New York State. These uplands were formed by dissection of the uplifted but flat lying sandstones and shales of the Middle and Upper Devonian Catskill Delta. The plateau surface is represented by flat-topped divides with drainage generally southwest toward the Susquehanna River system.

Glacial cover is generally thin, although some north-south valleys are so thick that they are completely buried. The present surficial deposits have resulted primarily from glaciations during the Cenozoic Era, the last of which was the Wisconsin glaciation, approximately 11,000 years ago.

b. SUBSURFACE INVESTIGATIONS

A subsurface investigation program was conducted by SCS in 1964. This program consisted of 15 drill holes and 18 test pits at locations along the dam, auxiliary spillway, structural elements, and borrow area. Applicable subsurface information is included in Appendix F, Drawing #13.

In general, the soils in the vicinity of the dam are of glacial till origin, gravels and silts overlying a shaly silt - stone bedrock from 15 to 40 feet below the original ground surface. Most of the soils encountered have either slight or slow permeability.

2.2 DESIGN RECORDS

The dam was designed by the Soil Conservation Service, who prepared a design report. A folder containing the design report and other design information was available at the SCS office at the Broome County Airport. Thirteen drawings, several of which have been included in Appendix F, were prepared for the construction of this dam.

2.3 CONSTRUCTION RECORDS

The dam was built in 1966. Complete construction records are available from the SCS office at the Broome County airport. Any changes from the original design which were made during construction have been indicated on the as-built dams.

2.4 OPERATION RECORDS

Since the dam is an uncontrolled, floodwater-retarding structure, no operating records are maintained regarding water levels. During periods of heavy rainfall, SCS personnel do monitor reservoir levels.

2.5 EVALUATION OF DATA

The data presented in this report has been compiled from information obtained from the Soil Conservation Service as well as the New York State Department of Environmental Conservation files. It appears to be adequate and reliable for Phase 1 inspection purposes.

SECTION 3: VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspection of the Site 3C Dam was conducted on November 8, 1979. The weather was overcast and the temperature was in the forties. The water surface at the time of the inspection was approximately 2 feet below the top of the principal spillway riser.

b. Embankment

No signs of distress were observed in the earth embankment and no evidence of misalignment, subsidence or surface cracking were noted on the embankment. There was some minor sloughing on the upstream face in the zone of water level fluctuation. Water was emerging from beneath the rock fill section at the toe on the southern end of the embankment. Since there are no collector pipes within the drain fill, this seepage is probably coming from the drainage system. Some brush and small trees were growing out of this rock fill section as well.

c. Principal Spillway

The principal spillway consists of a vertical drop inlet structure, a 30 inch diameter concrete pipe, and an outlet channel cut into natural ground. These components appeared to be in satisfactory condition. The orifice in the riser is rather small and limits the capacity of the principal spillway. There was a small void noted under the end of the concrete cradle beneath the principal spillway pipe. However, since this section was designed to support an 8 foot cantilever, this void will not affect the pipe.

d. Auxiliary Spillway

The auxiliary spillway for this structure is located in an earth cut at the northern end of the dam. The channel appeared to be in satisfactory condition.

e. Reservoir Drain

The 6 inch diameter reservoir drain and manually operated slide gate may be used to lower the reservoir level. This system was reported to be operational.

f. Downstream Channel

The downstream channel below the pipe outlet is riprapped for a short distance. Beyond the riprap, the channel is cut into natural ground. There were a number of trees growing along the channel.

g. Reservoir

There was some build up of sediment within the reservoir pool area. Two tributaries carry runoff from the golf course into the reservoir. The channel of these tributaries were riprapped, but the riprap had been undermined.

3.2 EVALUATION OF OBSERVATIONS

Visual observations did not reveal any problems which would adversely affect the safety of the dam. However, brush and small trees growing through the rockfill at the downstream toe on the southern end of the dam should be cut, excess sediments should be removed and a program of periodic maintenance should be established.

SECTION 4: OPERATION AND MAINTENANCE PROCEDURES

4.1 PROCEDURES

The normal water surface elevation is at the crest of the principal spillway. Downstream flows are limited by the flow through the orifice on the principal spillway riser, except during periods of extremely heavy runoff when the auxiliary spillway is in service.

4.2 MAINTENANCE OF THE DAM

The dam is maintained by the owner, Broome County. The maintenance on this dam is generally satisfactory.

4.3 WARNING SYSTEM IN EFFECT

There is no warning system in effect.

4.4 EVALUATION

The operation and maintenance procedures for this structure are satisfactory.

SECTION 5: HYDROLOGIC/HYDRAULIC

5.1 DRAINAGE AREA CHARACTERISTICS

Delineation of the 198 acre watershed of the Site 3C dam was made using the USGS. 7.5 minute quadrangle for Binghamton West, New York. The watershed consists of primarily grassed fields and woodlands on the Ely Park Golf Course. Relief in the drainage area is relatively steep.

5.2 ANALYSIS CRITERIA

The analysis of the floodwater retarding capability of this dam was performed using the Corps of Engineers HEC-1 computer program, Dam Safety version. This program develops an inflow hydrograph using the Snyder Synthetic Unit Hydrograph method and then uses the "Modified Puls" flood routing procedure. The spillway design flood selected was the Probable Maximum Flood (PMF) in accordance with the Recommended Guidelines of the U.S. Army Corps of Engineers.

5.3 SPILLWAY CAPACITY

The principal and auxiliary spillways are uncontrolled structures. The capacities for both spillways were taken from the stage-discharge curves included in the SCS design computations folder.

The spillways have sufficient capacity for discharging the peak outflow from the PMF. For this storm, the peak inflow is 638 cfs and the peak outflow is 637 cfs. When the spillways are discharging the peak outflow, the water surface will be 3.2 feet below the top of the dam. Further information concerning this analysis is included in Appendix C.

5.4 RESERVOIR CAPACITY

Normal flood control storage capacity of the reservoir between the principal and auxiliary spillways is 34.9 acre-feet which is equivalent to a runoff depth of 2.1 inches over the drainage area. Surge storage capacity to the maximum high water elevation is an additional 21.6 acre-feet, equivalent to a runoff depth over the drainage area of 1.3 inches. Total storage capacity of the dam is 61.0 acre-feet.

5.5 FLOODS OF RECORD

The maximum known flood occurred on September 27, 1975. The pool level at this time was reported to be about 10 feet above the principal spillway crest. The calculated discharge for this flood is as follows:

<u>Elevation (USGS)</u>	<u>Discharge (cfs)</u>
1139.8	19

5.6 OVERTOPPING POTENTIAL

Analysis indicates that the total discharge capacity is sufficient to prevent overtopping from the PMF.

5.7 EVALUATION

This dam has sufficient capability to impound and adequately discharge floodwaters expected to result from the PMF.

SECTION 6: STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

No signs of distress were observed in connection with the earth embankment.

b. Design and Construction Data

Design data was obtained from the Soil Conservation Service office at the Broome County airport. Stability analyses were performed by SCS using a Swedish circle method of analysis. Various conditions were analyzed. The conditions applicable to the dam as it was constructed are as follows:

<u>CONDITION</u>	<u>MINIMUM FACTOR OF SAFETY</u>	
	<u>UPSTREAM SLOPE</u>	<u>DOWNSTREAM SLOPE</u>
Full Draw Down	2.3	---
Long Term Steady State Seepage	---	1.62

The calculated factors of safety for this dam are considered to be adequate.

c. Seismic Stability

No seismic stability analysis was performed for this structure.

SECTION 7: ASSESSMENT/RECOMMENDATIONS

7.1 ASSESSMENT

a. Safety

The Phase I inspection of the Finch Hollow Site 3C dam did not reveal conditions which constitute a hazard to human life or property. The earth embankment is considered to be stable and the spillways are capable of retarding and safely discharging floodwaters resulting from the Probable Maximum Flood (PMF).

b. Adequacy of Information

Information reviewed for Phase I inspection purposes is considered to be adequate.

c. Need for Additional Investigations

No additional investigations are necessary at this time.

7.2 RECOMMENDED MEASURES

- a. Provide a program of periodic inspection and maintenance of the dam and appurtenances, including operation and lubrication of the slide gate mechanism. Document this information for future reference.
- b. Develop an emergency action plan for notification of downstream residents and the proper authorities in the event of heavy auxiliary spillway discharge.
- c. Cut the brush and trees growing through the rockfill at the downstream toe on the southern end of the dam.
- d. Remove the excess sediment deposition near the two reservoir inflow tributaries.

APPENDIX A

PHOTOGRAPHS



Crest of Embankment



Principal Spillway Riser, Inlet on Left Side



Upstream Slope of Dam with Auxiliary
Spillway Channel at Northern End



Upstream End of Auxiliary Spillway Channel



Outlet to Principal Spillway Conduit and Downstream Channel



Undermined Concrete Cradle at Outlet of Principal Spillway Conduit



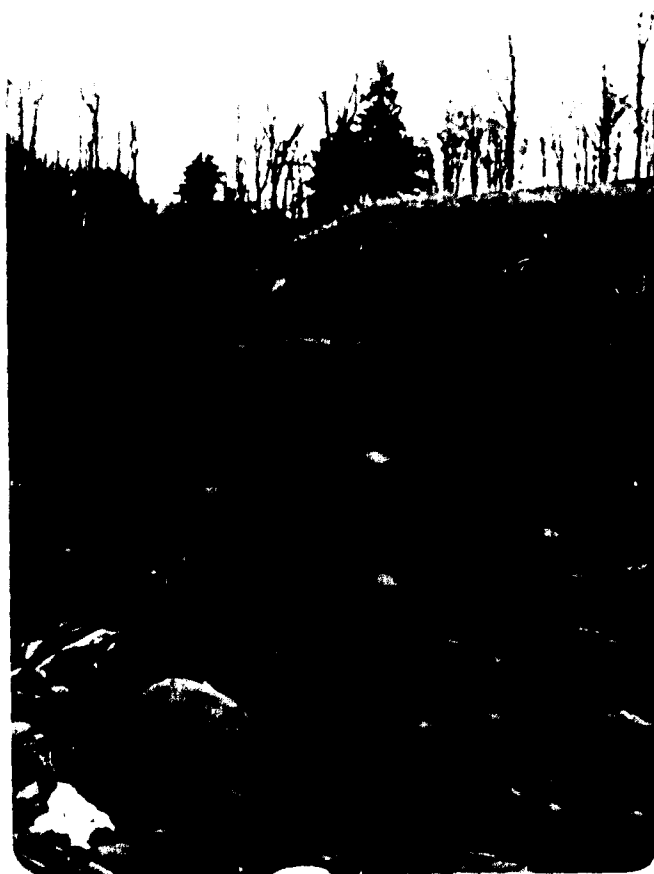
Rock Fill Section at Toe on Southern End of Embankment



Seepage Emerging From Rock Fill Section



Upstream Slope and Reservoir Pool, Tributary on Top Right



Undermined Riprap on Tributary Shown Above

APPENDIX B

VISUAL INSPECTION CHECKLIST

VISUAL INSPECTION CHECKLIST

1) Basic Data

a. General

Name of Dam FINCH HOLLOW SITE 3C
Fed. I.D. # 724 DEC Dam No. 96C-3445
River Basin SUSQUEHANNA
Location: Town BINGHAMTON County BROOME
Stream Name TROUT BROOK
Tributary of _____
Latitude (N) 42° 7.1' Longitude (W) 75° 55.8'
Type of Dam EARTH
Hazard Category C
Date(s) of Inspection 11/8/79
Weather Conditions 40° OVERCAST
Reservoir Level at Time of Inspection 28" BELOW TOP OF RISER

b. Inspection Personnel R. WARRENDER W. LYNICK

c. Persons Contacted (Including Address & Phone No.) _____

GARY PAGE - SCS AREA OFFICE BROOME Co. AIRPORT 607-773-2751
SCOTT SNOVER - SCS SYRACUSE OFFICE 315-423-5526

d. History:

Date Constructed 1966 Date(s) Reconstructed _____

Designer SCS

Constructed By _____

Owner BROOME COUNTY

2) Embankment

a. Characteristics

- (1) Embankment Material HOMOGENEOUS EARTH FILL
- (2) Cutoff Type EARTH
- (3) Impervious Core NONE
- (4) Internal Drainage System NONE
- (5) Miscellaneous ALL SLOPES - CROWN VETCH WITH GRASS
SATISFACTORY VEGETATIVE COVER

b. Crest

- (1) Vertical Alignment POSITIVE CAMBER OVER PRINCIPAL SPILLWAY
CONDUIT
- (2) Horizontal Alignment CURVILINEAR - SATISFACTORY
- (3) Surface Cracks NONE
- (4) Miscellaneous _____

c. Upstream Slope

- (1) Slope (Estimate) (V:H) 1 ON 3
- (2) Undesirable Growth or Debris, Animal Burrows NONE
- (3) Sloughing, Subsidence or Depressions MINOR SLOUGHING IN
ZONE OF WATER LEVEL FLUCTUATION - PRESENT
WATER SURFACE TO 6' ABOVE TOP OF RISER

(4) Slope Protection NONE

(5) Surface Cracks or Movement at Toe NONE

d. Downstream Slope

(1) Slope (Estimate - V:H) 1 ON 2.5

(2) Undesirable Growth or Debris, Animal Burrows NONE - IN WASTE ROCK AREA - SEVERAL TREES & LIGHT BRUSH GROWS THROUGH THE ROCK

(3) Sloughing, Subsidence or Depressions NONE

(4) Surface Cracks or Movement at Toe NONE

(5) Seepage LESS THAN 1 GAL/MIN AT BOTTOM OF VALLEY AT WASTE ROCK AREA - ~~WEST~~ SOUTH SIDE

(6) External Drainage System (Ditches, Trenches; Blanket) ROCK TOE DRAIN

(7) Condition Around Outlet Structure VOID - SEE SERV. SPILLWAY SECTION

(8) Seepage Beyond Toe NO

e. Abutments - Embankment Contact

NO RIPRAP CHANNELS ALONG EMBANKMENT-ABUTMENT INTERFACE

(1) Erosion at Contact NONE

(2) Seepage Along Contact ALONG SOUTH DOWNSTREAM CONTACT
6' ± ABOVE TOP WASTE ROCK TOE - MINOR SEEPAGE
(< 1 GAL/MIN) · COULD BE HILLSIDE SEEPAGE

3) Drainage System

a. Description of System NONE VISIBLE

b. Condition of System _____

c. Discharge from Drainage System _____

4) Instrumentation (Monumentation/Surveys, Observation Wells, Weirs, Piezometers, Etc.) _____

NONE

5) Reservoir

- a. Slopes STEEP
- b. Sedimentation SIGNIFICANT AMOUNT FROM 2 TRIBUTARIES CARRYING DIRECT RUNOFF FROM GOLF COURSE
- c. Unusual Conditions Which Affect Dam _____

6) Area Downstream of Dam

- a. Downstream Hazard (No. of Homes, Highways, etc.) CITY OF BINGHAMTON AND ROUTE 17
- b. Seepage, Unusual Growth NONE
- c. Evidence of Movement Beyond Toe of Dam NONE
- d. Condition of Downstream Channel V SHAPED - STEEP - TREE LINED

7) Spillway(s) (Including Discharge Conveyance Channel)

- a. General OLD STYLE SCS RISER-ON SERVICE SPILLWAY ITS USE WAS DISCONTINUED IN FUTURE DESIGNS SHORTLY AFTER THIS WAS BUILT
- b. Condition of Service Spillway SATISFACTORY - HOWEVER ORIFICE IS VERY SMALL - SMALL VOID UNDER CONCRETE CRADLE FOR CANTILEVERED OUTLET PIPE

c. Condition of Auxiliary Spillway SATISFACTORY

d. Condition of Discharge Conveyance Channel

STEEP VALLEY WITH TREES LITTLE RIPRAP

8) Reservoir Drain/Outlet

Type: Pipe X Conduit _____ Other _____

Material: Concrete _____ Metal CMP Other _____

Size: 6" Length ~~4~~ 36'

Invert Elevations: Entrance 1119.0 Exit 1119.0

Physical Condition (Describe): _____ Unobservable X

Material: _____

Joints: _____ Alignment _____

Structural Integrity: _____

Hydraulic Capability: _____

Means of Control: Gate X Valve _____ Uncontrolled _____

Operation: Operable X Inoperable _____ Other _____

Present Condition (Describe): APPEARED SATISFACTORY

9) Structural

- a. Concrete Surfaces Good
- b. Structural Cracking NONE
- c. Movement - Horizontal & Vertical Alignment (Settlement) NO MOVEMENT EVIDENT
- d. Junctions with Abutments or Embankments SATISFACTORY
- e. Drains - Foundation, Joint, Face NONE
- f. Water Passages, Conduits, Sluices Good
- g. Seepage or Leakage NONE

h. Joints - Construction, etc. _____

i. Foundation _____

j. Abutments _____

k. Control Gates _____

l. Approach & Outlet Channels _____

m. Energy Dissipators (Plunge Pool, etc.) MEDIUM RIPRAP PILED UP
AT OUTLET FOR INTERIM DISTANCE

n. Intake Structures SERVICE SPILLWAY RISER- OKAY BUT SMALL

o. Stability _____

p. Miscellaneous _____

APPENDIX C

HYDROLOGIC/HYDRAULIC
ENGINEERING DATA AND COMPUTATIONS

CHECK LIST FOR DAMS
HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA

1

AREA-CAPACITY DATA:

	<u>Elevation</u> (ft.)	<u>Surface Area</u> (acres)	<u>Storage Capacity</u> (acre-ft.)
1) Top of Dam	<u>1156.2</u>	<u>4.20</u>	<u>61.0</u>
2) Design High Water (Max. Design Pool)	<u> </u>	<u> </u>	<u> </u>
3) Auxiliary Spillway Crest	<u>1151.0</u>	<u>3.65</u>	<u>39.4</u>
4) Pool Level with Flashboards	<u> </u>	<u> </u>	<u> </u>
5) Service Spillway Crest	<u>1129.8</u>	<u>0.97</u>	<u>4.5</u>

DISCHARGES

	<u>Volume</u> (cfs)
1) Average Daily	<u> </u>
2) Spillway @ Maximum High Water	<u>23.4</u>
3) Spillway @ Design High Water	<u> </u>
4) Spillway @ Auxiliary Spillway Crest Elevation	<u>22.1</u>
5) Low Level Outlet	<u>5.8</u>
6) Total (of all facilities) @ Maximum High Water	<u>3210</u>
7) Maximum Known Flood	<u>18.9</u>

CREST:

ELEVATION: 1156.2Type: EARTHWidth: 14

Length: _____

Spillover AUXILIARY CHANNELLocation NORTHERN END

SPILLWAY:

PRINCIPAL

EMERGENCY

1129.8Elevation 1151.0RC DROP INLETType TRAPEZOIDAL CHANNEL2.5' X 2.5'Width 100'

Type of Control

✓

Uncontrolled

✓

Controlled:

Type

(Flashboards; gate)

Number

Size/Length

Invert Material

Anticipated Length
of operating service

Chute Length

Height Between Spillway Crest
& Approach Channel Invert
(Weir Flow)

OUTLET STRUCTURES/EMERGENCY DRAWDOWN FACILITIES:

Type: Gate ✓ Sluice _____ Conduit _____ Penstock _____Shape: GATE-FLAT CIRCULAR CONDUIT-ROUND METALSize: 6" 6"Elevations: Entrance Invert 1119.0Exit Invert 1119.0

Tailrace Channel: Elevation _____

HYDROMETEROLOGICAL GAGES:

Type: NONE

Location: _____

Records:

Date - NONE

Max. Reading - _____

FLOOD WATER CONTROL SYSTEM:

Warning System: NONE

Method of Controlled Releases (mechanisms):

RESERVOIR DRAIN

DRAINAGE AREA: 198 ACRES

DRAINAGE BASIN RUNOFF CHARACTERISTICS:

Land Use - Type: GOLF COURSE

Terrain - Relief: STEEP

Surface - Soil: _____

Runoff Potential (existing or planned extensive alterations to existing (surface or subsurface conditions)

NONE

Potential Sedimentation problem areas (natural or man-made; present or future)

TRIBUTARIES COMING IN SEEM TO BRING A
LARGE AMOUNT OF GRAVEL & OTHER SEDIMENT INTO
RESERVOIR POOL AREA.

Potential Backwater problem areas for levels at maximum storage capacity including surcharge storage:

NONE

Dikes - Floodwalls (overflow & non-overflow) - Low reaches along the Reservoir perimeter:

Location: NONE

Elevation: _____

Reservoir:

Length @ Maximum Pool _____ (Miles)

Length of Shoreline (@ Spillway Crest) _____ (Miles)

PROJECT GRID

JOB	FINCH HOLLOW SITE 3C		SHEET NO.	1	CHECKED BY		DATE	
SUBJECT	HYDROLOGIC / HYDRAULIC COMPUTATIONS				COMPUTED BY	RLW	DATE	3/18/80
PRINCIPAL SPILLWAY CAPACITY								
FROM SCS REPORT - FORMULAS								
ORIFICE FLOW				WEIR FLOW				
$Q = 3.42 H^{3/2}$				$Q = 2.85 h^{3/2}$				
WATER SURFACE AT TOP OF DAM								
THIS CONTROL	$Q = 3.42 (1156.2 - 1109.25)^{3/2}$				$Q = 2.85 (1156.2 - 1129.8)^{3/2}$			
	$\rightarrow = 23.43 \text{ cfs}$				$= 386.6 \text{ cfs}$			
WATER SURFACE AT AUXILIARY SPILLWAY CREST								
THIS CONTROLS	$Q = 3.42 (115.0 - 1109.25)^{3/2}$				$Q = 2.85 (115.0 - 1129.8)^{3/2}$			
	$\rightarrow Q = 22.1 \text{ cfs}$				$= 278.2 \text{ cfs}$			
MAXIMUM KNOWN WATER SURFACE (ELEVATION 1139.8)								
THIS CONTROLS	$Q = 3.42 (1139.8 - 1109.25)^{3/2}$				$Q = 2.85 (1139.8 - 1129.8)^{3/2}$			
	$\rightarrow = 18.9 \text{ cfs}$				$= 90.1 \text{ cfs}$			
RESERVOIR DRAIN CAPACITY								
WATER SURFACE AT PRINCIPAL SPILLWAY CREST								
$Q = \pi (0.5)^2 \sqrt{\frac{2(32.2)(1129.8 - 1119.25)}{1 + 0.5 + 0 + .252(37)}} = 5.8 \text{ cfs}$								

STATE

NY

PROJECT

L. Chocanut WS - Trout Brook - site 3C

BY

[Signature]

DATE

12/64

CHECKED BY

LCI

DATE

12/64

JOB NO.

NY-2020

SUBJECT

Computations for Principal Spillway Flow

SHEET 4-1 OF

Maximum average Release Rate limited to 10 cfs

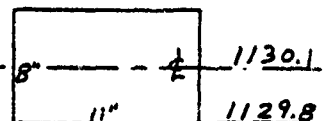
$$\therefore \text{Max. Discharge of Orifice} = Q_m = \frac{10}{0.6} = 16.7 \text{ cfs}$$

$$\text{Head from orifice } \frac{1}{2} \text{ to crest emergency spillway} = 1153.0 - 1130.1 = 22.9'$$

$$\text{Area of Orifice} = A = \frac{Q}{C \sqrt{2gh}} = \frac{16.7}{(0.7)(8.02)(4.8)} = 0.62 \text{ ft}^2$$

USE 8" X 11" Orifice

$$A = 88 \text{ in}^2 = 0.61 \text{ ft}^2$$



Orifice Flow

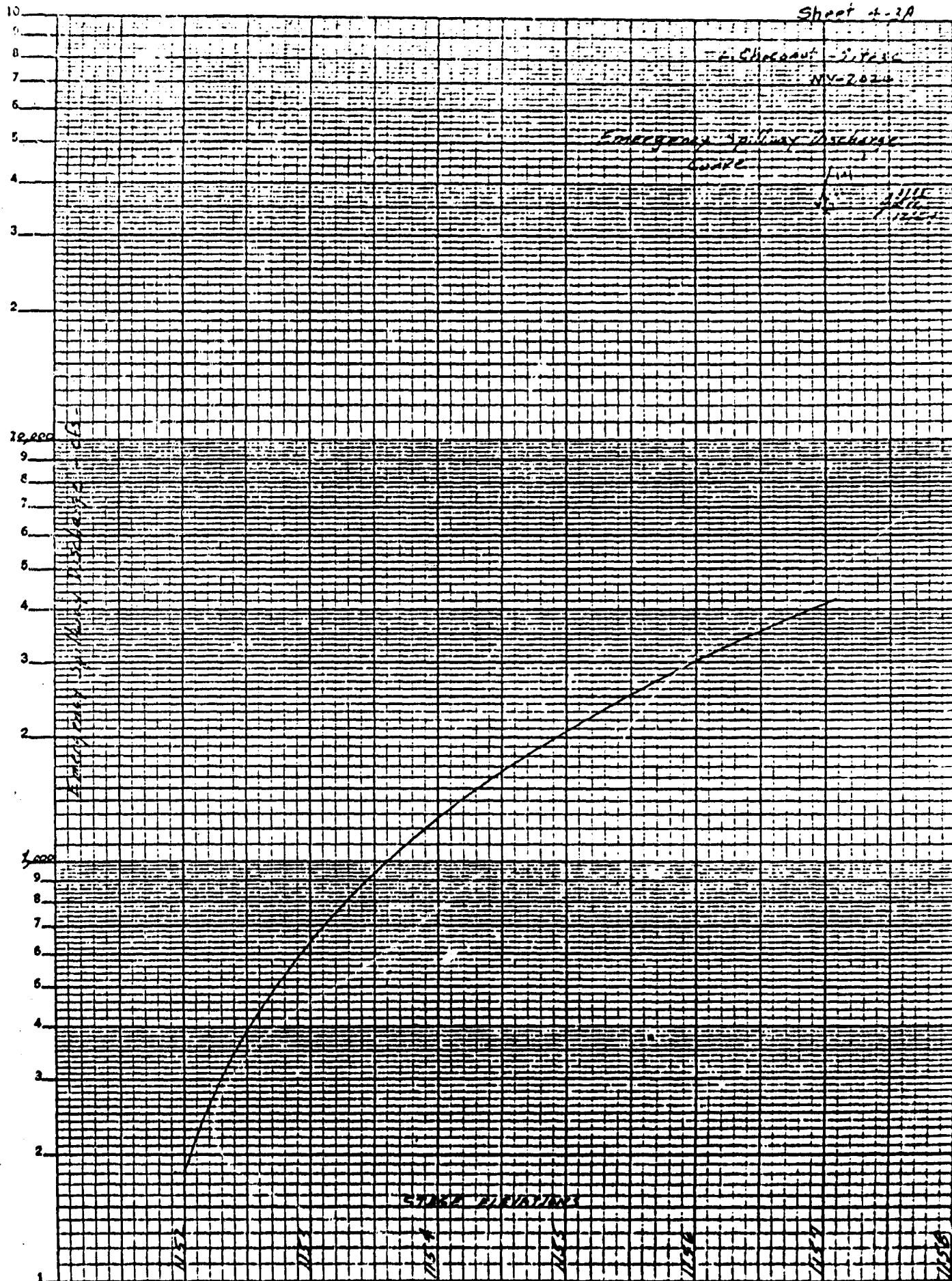
$$Q_o = (0.7)(0.61)(8.02) h^{\frac{1}{2}} = 3.42 h^{\frac{1}{2}}$$

Use 30" principal spillway conduit; pipe flow will not occur because of orifice limitation.

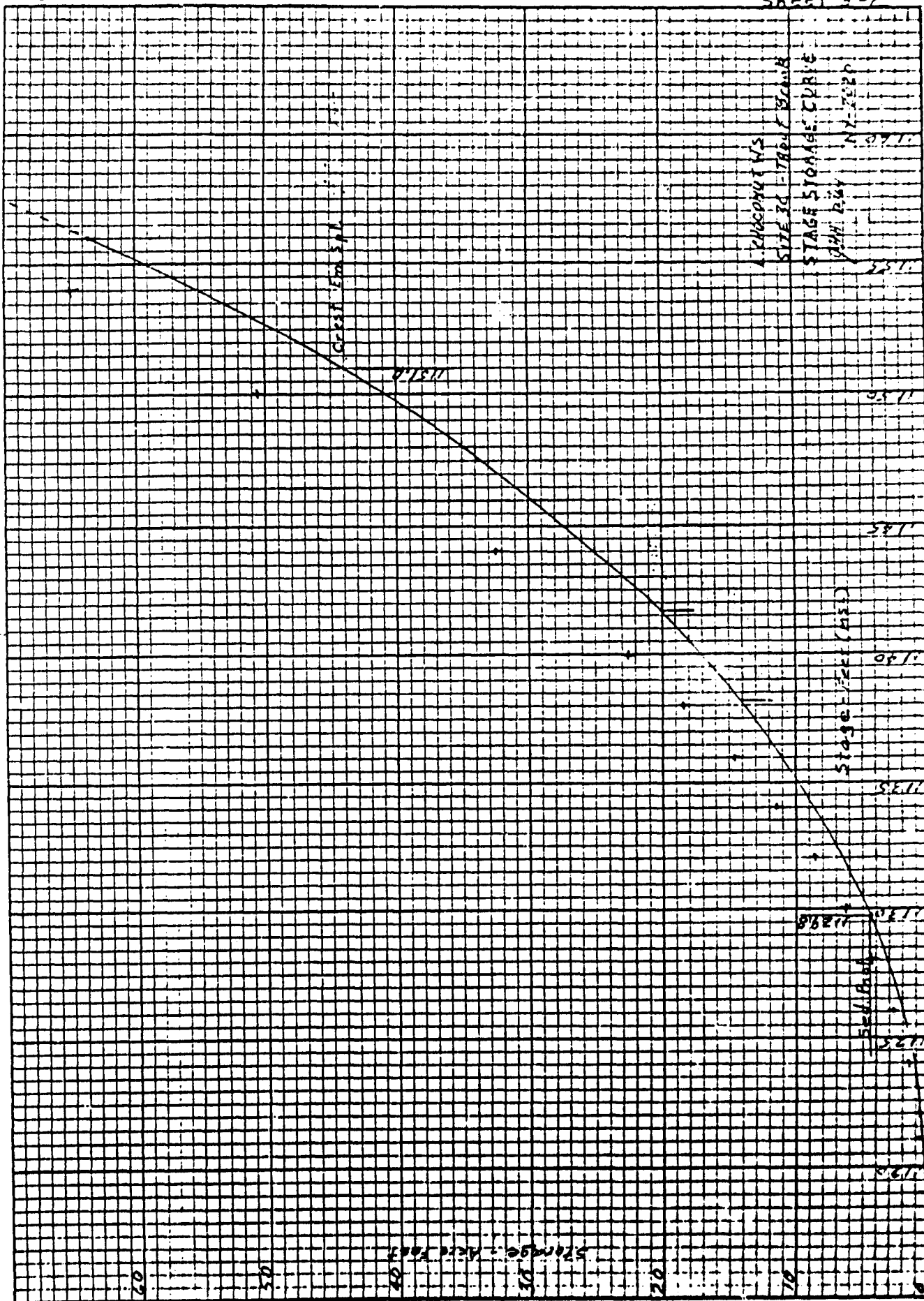
Weir Flow @ Crest of Orifice

$$Q_w = CLH^{\frac{3}{2}} = 3.1 \times 0.92 \times h^{\frac{3}{2}} = 2.85 h^{\frac{3}{2}}$$

Emergency Spillway Discharge
Curve
1/11/55
1/11/55



K&E SEMI-LOGARITHMIC 359-71
KEUPFL & ESSLER CO. - BIRMINGHAM, ALA.
3 CYCLES X 70 DIVISIONS



 FLOOD HYDROGRAPH PACKAGE (HUC-1)
 DAN SAFETY VERIFICATION JULY 1978
 LAST MODIFICATION: 26 FEB 79
 PREPARED BY: DR. RAYMOND A. P. 79

 NEW YORK STATE
 DEPT OF ENVIRONMENTAL CONSERVATION
 FLOOD PROTECTION BUREAU

 10/1/78 12:00 PM 1/1/78

1 A1 TAOOT RADAR SITE 3C

2 A2 PHASE 1

3 A3 PHF

4 3 100

5 31 5

6 J 1 2 1

7 J1 .5 1

8 K 0 1

9 K1 INFLOW FROM BASIN

10 1 1 0.31

11 P 0 20.5 111 123 133 142

12 1 1 .1

13 1 2.45 .025

14 1 -2.0 -0.05 1

15 K 1 1 2 1

16 K1 ROUTE THROUGH RESERVOIR

17 1 1 1

18 1 1 1

19 1129.8 1131.5 1135 1140 1150 1152 1153 1154 1156 1157

20 15 0 4 7.5 10.8 15.3 180 640 1260 3000 4150

21 15 1.5 4.6 10 17 27.4 41 59

22 SE 1125 1130 1135 1140 1145 1150 1155

23 1125.2 1126.2 1127.2 1128.2 1129.2 1130.2 1131.2 1132.2 1133.2 1134.2 1135.2

24 1125.2 1126.2 1127.2 1128.2 1129.2 1130.2 1131.2 1132.2 1133.2 1134.2 1135.2

25 1125.2 1126.2 1127.2 1128.2 1129.2 1130.2 1131.2 1132.2 1133.2 1134.2 1135.2

26 1125.2 1126.2 1127.2 1128.2 1129.2 1130.2 1131.2 1132.2 1133.2 1134.2 1135.2

27 1125.2 1126.2 1127.2 1128.2 1129.2 1130.2 1131.2 1132.2 1133.2 1134.2 1135.2

新華書店經售

[illegible]

IC. 11

DATE	NOV 15	DAY	0
		JUPER	5

JOB SPECIFICATION		UNIT	NET
IMR	0	0	0
NAT	0	0	0
PROPT	0	0	0
TRACE	0	0	0

IPRT 0
NSTAN 0

1PLT 0

MULTI-PLAN ANALYSES TO BE PERFORMED
NPLAN= 1 IRTIME= 2 CRIP= 1

371.5 = 0.50 1.00

[illegible]

SUB-AREA RUNOFF COMPUTATION

REFUGEE FRIM RASTI.

ISTAG	1	ICU.P	0	IECON	0	ITAPE	0	JPLT	2	JPRT	0	INAME	1	ISTAGE	0	IAUTO	0
-------	---	-------	---	-------	---	-------	---	------	---	------	---	-------	---	--------	---	-------	---

HYDROGRAPHIC DATA

RATIO	ISNUW	ISAME	LOCAL
0.	0	0	0

PRECIP DATA

SPFE	P:IS	R:6	PRECIP DATA		R:8	R:72	R:96
0.	20.50	111.00	123.00	133.00	142.00	0.	0.
15.000							

TRSPC COMPUTED BY THE PROGRAM IS 0.850

ACCOUNT	STRAN	DLTKR	RTIUL	ERAIN	STRSK	RTIUK	STATL	CHSTL	ALSMX	RTIMP
0	0.	0.	1.00	0.	0.	1.00	1.00	0.10	0.	0.

UNIT HYDROGRAPH DATA
Tpe 2.45 CP=0.63

APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC=10.90 AND R= 9.11 INTERVALS

RECESSION DATA

STI TQ= -1.00 QRCSN= -0.05 RTIUR= 1.00

UNIT	HYDROGRAPH	55	100	OF	PERIOD	ORDINATES	LAGE	2.45	HOURS	CP	0.63	VOL	1.00
22	6	12	19	27	35	42	46	51	52				
1	47	38	34	27	24	20	20						
2	17	13	11	9	8	7							
3	5	4	4	3	3	2							
4	2	1	1	1	1	1							
5	1	0	0	0	0	0							

1.01	0.12	3	0.01	0.00	1.	1.02	1.00	100	0.03	0.00	0.03	1.
1.01	1.00	4	0.00	0.00	1.	1.02	1.00	101	0.03	0.00	0.03	1.
1.01	1.15	5	0.00	0.00	1.	0.	0.	102	0.03	0.00	0.03	1.
1.01	1.30	6	0.00	0.00	1.	0.	0.	103	0.03	0.00	0.03	1.
1.01	1.45	7	0.00	0.00	1.	0.	0.	104	0.03	0.00	0.03	1.
1.01	1.60	8	0.00	0.00	1.	0.	0.	105	0.03	0.00	0.03	2.
1.01	1.75	9	0.00	0.00	1.	0.	0.	106	0.03	0.00	0.03	2.
1.01	1.90	10	0.00	0.00	1.	0.	0.	107	0.03	0.00	0.03	2.
1.01	2.05	11	0.00	0.00	1.	0.	0.	108	0.03	0.00	0.03	2.
1.01	2.20	12	0.00	0.00	1.	0.	0.	109	0.03	0.00	0.03	2.
1.01	2.35	13	0.00	0.00	1.	0.	0.	110	0.03	0.00	0.03	2.
1.01	2.50	14	0.00	0.00	1.	0.	0.	111	0.03	0.00	0.03	2.
1.01	2.65	15	0.00	0.00	1.	0.	0.	112	0.03	0.00	0.03	2.
1.01	2.80	16	0.00	0.00	1.	0.	0.	113	0.03	0.00	0.03	2.
1.01	2.95	17	0.00	0.00	1.	0.	0.	114	0.03	0.00	0.03	2.
1.01	3.10	18	0.00	0.00	1.	0.	0.	115	0.03	0.00	0.03	2.
1.01	3.25	19	0.00	0.00	1.	0.	0.	116	0.03	0.00	0.03	2.
1.01	3.40	20	0.00	0.00	1.	0.	0.	117	0.03	0.00	0.03	2.
1.01	3.55	21	0.00	0.00	1.	0.	0.	118	0.03	0.00	0.03	2.
1.01	3.70	22	0.00	0.00	1.	0.	0.	119	0.03	0.00	0.03	2.
1.01	3.85	23	0.00	0.00	1.	0.	0.	120	0.03	0.00	0.03	2.
1.01	4.00	24	0.00	0.00	1.	0.	0.	121	0.03	0.00	0.03	2.
1.01	4.15	25	0.00	0.00	1.	0.	0.	122	0.03	0.00	0.03	2.
1.01	4.30	26	0.00	0.00	1.	0.	0.	123	0.03	0.00	0.03	2.
1.01	4.45	27	0.00	0.00	1.	0.	0.	124	0.03	0.00	0.03	2.
1.01	4.60	28	0.00	0.00	1.	0.	0.	125	0.03	0.00	0.03	2.
1.01	4.75	29	0.00	0.00	1.	0.	0.	126	0.03	0.00	0.03	2.
1.01	4.90	30	0.00	0.00	1.	0.	0.	127	0.03	0.00	0.03	2.
1.01	5.05	31	0.00	0.00	1.	0.	0.	128	0.03	0.00	0.03	2.
1.01	5.20	32	0.00	0.00	1.	0.	0.	129	0.03	0.00	0.03	2.
1.01	5.35	33	0.00	0.00	1.	0.	0.	130	0.03	0.00	0.03	2.
1.01	5.50	34	0.00	0.00	1.	0.	0.	131	0.03	0.00	0.03	2.
1.01	5.65	35	0.00	0.00	1.	0.	0.	132	0.03	0.00	0.03	2.
1.01	5.80	36	0.00	0.00	1.	0.	0.	133	0.03	0.00	0.03	2.
1.01	5.95	37	0.00	0.00	1.	0.	0.	134	0.03	0.00	0.03	2.
1.01	6.10	38	0.00	0.00	1.	0.	0.	135	0.03	0.00	0.03	2.
1.01	6.25	39	0.00	0.00	1.	0.	0.	136	0.03	0.00	0.03	2.
1.01	6.40	40	0.00	0.00	1.	0.	0.	137	0.03	0.00	0.03	2.
1.01	6.55	41	0.00	0.00	1.	0.	0.	138	0.03	0.00	0.03	2.
1.01	6.70	42	0.00	0.00	1.	0.	0.	139	0.03	0.00	0.03	2.
1.01	6.85	43	0.00	0.00	1.	0.	0.	140	0.03	0.00	0.03	2.
1.01	7.00	44	0.00	0.00	1.	0.	0.	141	0.03	0.00	0.03	2.
1.01	7.15	45	0.00	0.00	1.	0.	0.	142	0.03	0.00	0.03	2.
1.01	7.30	46	0.00	0.00	1.	0.	0.	143	0.03	0.00	0.03	2.
1.01	7.45	47	0.00	0.00	1.	0.	0.	144	0.03	0.00	0.03	2.
1.01	7.60	48	0.00	0.00	1.	0.	0.	145	0.03	0.00	0.03	2.
1.01	7.75	49	0.00	0.00	1.	0.	0.	146	0.03	0.00	0.03	2.
1.01	7.90	50	0.00	0.00	1.	0.	0.	147	0.03	0.00	0.03	2.
1.01	8.05	51	0.00	0.00	1.	0.	0.	148	0.03	0.00	0.03	2.
1.01	8.20	52	0.00	0.00	1.	0.	0.	149	0.03	0.00	0.03	2.
1.01	8.35	53	0.00	0.00	1.	0.	0.	150	0.03	0.00	0.03	2.
1.01	8.50	54	0.00	0.00	1.	0.	0.	151	0.03	0.00	0.03	2.
1.01	8.65	55	0.00	0.00	1.	0.	0.	152	0.03	0.00	0.03	2.
1.01	8.80	56	0.00	0.00	1.	0.	0.	153	0.03	0.00	0.03	2.
1.01	8.95	57	0.00	0.00	1.	0.	0.	154	0.03	0.00	0.03	2.
1.01	9.10	58	0.00	0.00	1.	0.	0.	155	0.03	0.00	0.03	2.
1.01	9.25	59	0.00	0.00	1.	0.	0.	156	0.03	0.00	0.03	2.
1.01	9.40	60	0.00	0.00	1.	0.	0.	157	0.03	0.00	0.03	2.
1.01	9.55	61	0.00	0.00	1.	0.	0.	158	0.03	0.00	0.03	2.
1.01	9.70	62	0.00	0.00	1.	0.	0.	159	0.03	0.00	0.03	2.
1.01	9.85	63	0.00	0.00	1.	0.	0.	160	0.03	0.00	0.03	2.
1.01	10.00	64	0.00	0.00	1.	0.	0.	161	0.03	0.00	0.03	2.

[illegible][illegible]

	PFK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	633.	461.	154.	78.		4939.
CNS	13.	13.	4.	2.		423.
INCIES		13.84	13.44	18.65		18.68
MI		351.61	468.29	474.43		474.43
ACFT		229.	305.	300.		309.

STATION 1, PLANTATION 2

END-OF-PERIOD HYDROGRAPHIC RATES

[illegible][illegible][illegible]

PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
 FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
 AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS	
				RATIO 1	RATIO 2
HYDROGRAPH AT	1	0.31	1	0.50	1.00
	(0.00)	(319.	638.
ROUTED TO	1	0.31	1	9.03)(18.06)(
	(0.00)	(314.	637.
				9.01)(18.02)(

PLATE 1

RATIO OF PAF	ELEVATION STORAGE OUTFLOW	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM	DURATION OVER TOP HOURS	MAXIMUM OUTFLOW CFS	MAXIMUM STORAGE AC-FT	MAXIMUM DEPTH INVER DAM	TIME OF FAILURE HOURS
0.50	1152.30	4.	4.	1156.20	0.	318.	49.	0.	0.
1.00	1152.99	0.	0.	3230.	0.	637.	52.	0.	0.

APPENDIX D

STABILITY COMPUTATIONS

2 -- W. S. Atkinson -- 3/17/65

Rey S. Decker

Subj: ENG - Soil Tests 22 - New York WP-08, Trout Brook, Site No. 3-C
(Broome County)

- B. Comacted Density: Standard Proctor compaction tests were made on the fraction passing the 3/4-inch sieve. The tests were made in accordance with ASTM Designation 698, Method C. The maximum densities obtained on the glacial till samples fell within the narrow limits of 122 p.c.f. to 123.5 p.c.f. The maximum density obtained on the lacustrine material was 113 p.c.f.
- C. Shear Strength: A triaxial shear test was made on Sample 65W2074 to represent the borrow samples submitted. The test was made on the fraction passing the 3/4-inch sieve. The test specimen diameter was 4.0 inches. The test was made at a density of 100 percent of standard Proctor (ASTM - D698, Method C) at saturation.

The effective stress shear values obtained were $\bar{\phi} = 24.5^\circ$, $\bar{c} = 800$ p.s.f. and the total stress shear values obtained were $\phi = 18^\circ$, $c = 1100$ p.s.f. The test values are suggested for design.

SLOPE STABILITY

The stability of the proposed slopes was checked with a Swedish circle method of analysis. The foundation at the maximum section is bedrock; therefore, the analysis was limited to the embankment. A phreatic line from emergency spillway was assumed.

The proposed 3:1 upstream slope has a factor of safety of 2.3 for the draw-down case.

The proposed 2 1/2:1 downstream slope has a factor of safety of 1.62 for the no-drain condition.

A summary of the analysis is attached.

SETTLEMENT ANALYSIS

The glacial till mantle is logged as very dense. The consolidation potential of the till is expected to be low under the proposed fill height and the need for special design features is not indicated.

RECOMMENDATIONS

- A. Site Preparation: Channel banks and trench slopes that are perpendicular to \bar{E} should be no steeper than 3:1.
- B. Cutoff Trench: The cutoff trench should bottom in firm bedrock on the left abutment. Between the channels and on the right abutment a minimum trench depth of 6 feet is suggested.

SOIL MECHANICS LABORATORY
TRIAXIAL SHEAR TEST DATASample Number 65W2074Project Trout Creek 3-CLocation New York

Moisture-Density Data

Standard ☒ Max. γ 123.5 pcfModified ☐Curve No. 4 of 4 Optimum Moisture 10.0 %L.L. 27 P.L. 16 Class CL G_s 2.76% Finer Than: 0.002mm 120 0.005mm 130 200 57

Other Factors Affecting Shear:

% Dispersion 13 % Salt _____

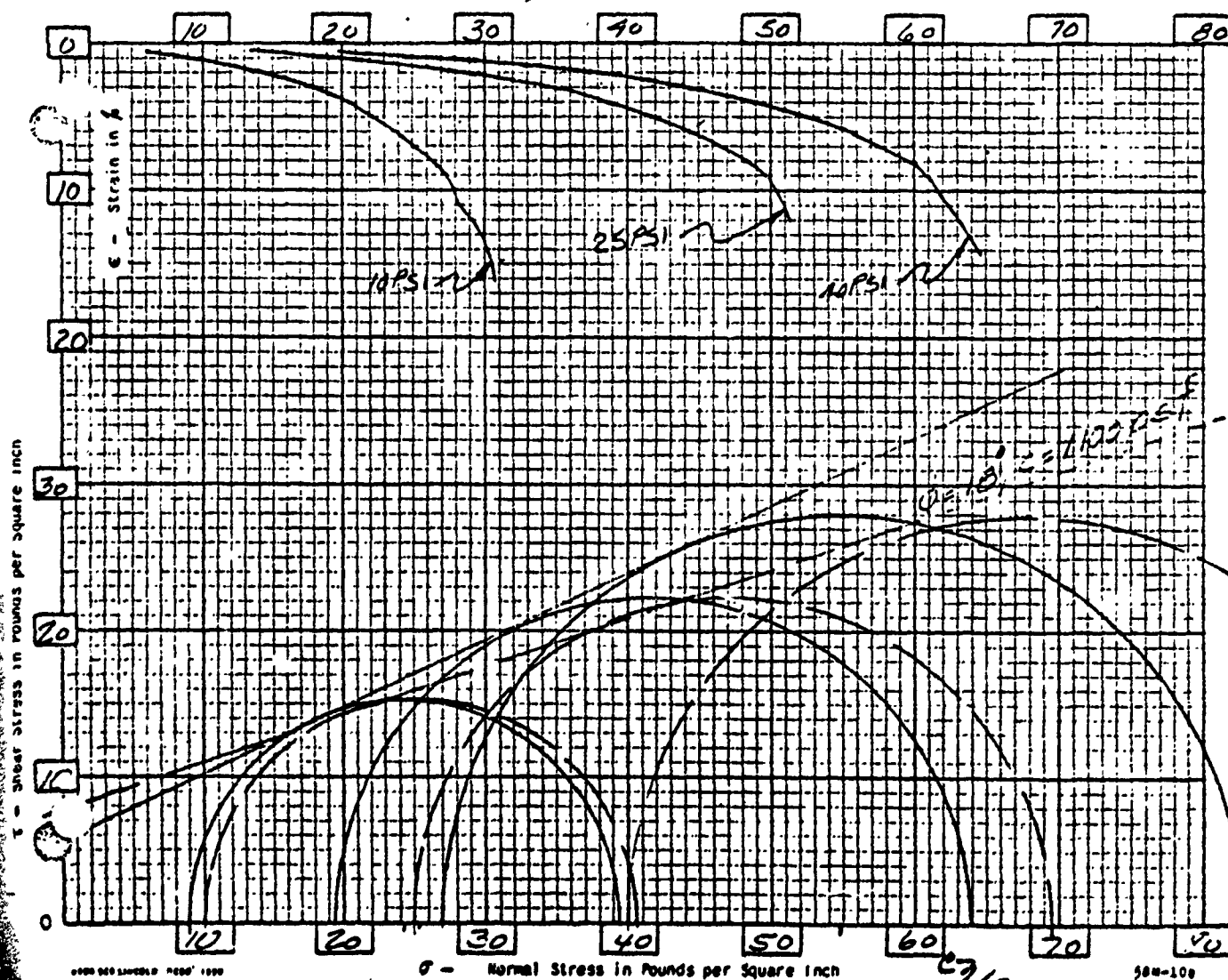
Other: _____

Specifications:

Specimen: Max. 3/4" ☒ Consolidated ☐ Drained
Height _____ Size 3/4" ☐ Unconsolidated ☒ Undrained
Diameter 40" Material PORE PRESSURE MEASURED☐ Undisturbed and Tested at: ☐ Natural Moisture ☐ Saturation☒ Remolded and Tested at: 100 % of ☒ Standard ☐ Modifiedwith $w =$ _____ % which is☐ Lower than Optimum ☐ Optimum ☐ Higher than Optimum ☐ Saturated

Test Data

Core Nos W	Dry Density γ pcf	% Max. Dry Den.	Moisture Content			Lateral Pressure σ_3	Consolidation Data		Stress at Failure $\sigma_1 - \sigma_3$	% Strain at Failure ϵ	Internal Friction ϕ Tan ϕ	Unit Cohesion \bar{c}	
			Start %	% Sat. Start	End %		Orig. e_0	Final e_f					
1.1	123.6	100.1	13.6	95.1	13.0	10	8.9	.3737	.3731	30.6	15	ϕ	
5.6	124.2	100.5	13.3	95.0	12.4	25	19.4	.3870	.3596	44.4	6	24.5°	56 psi
3.3	123.0	99.6	14.0	96.5	12.5	40	26.9	.4007	.3530	55.5	6		620 psi
												Tan ϕ	

 $\sigma_1 - \sigma_3$ in Pounds per Square Inch σ - Normal Stress in Pounds per Square Inch

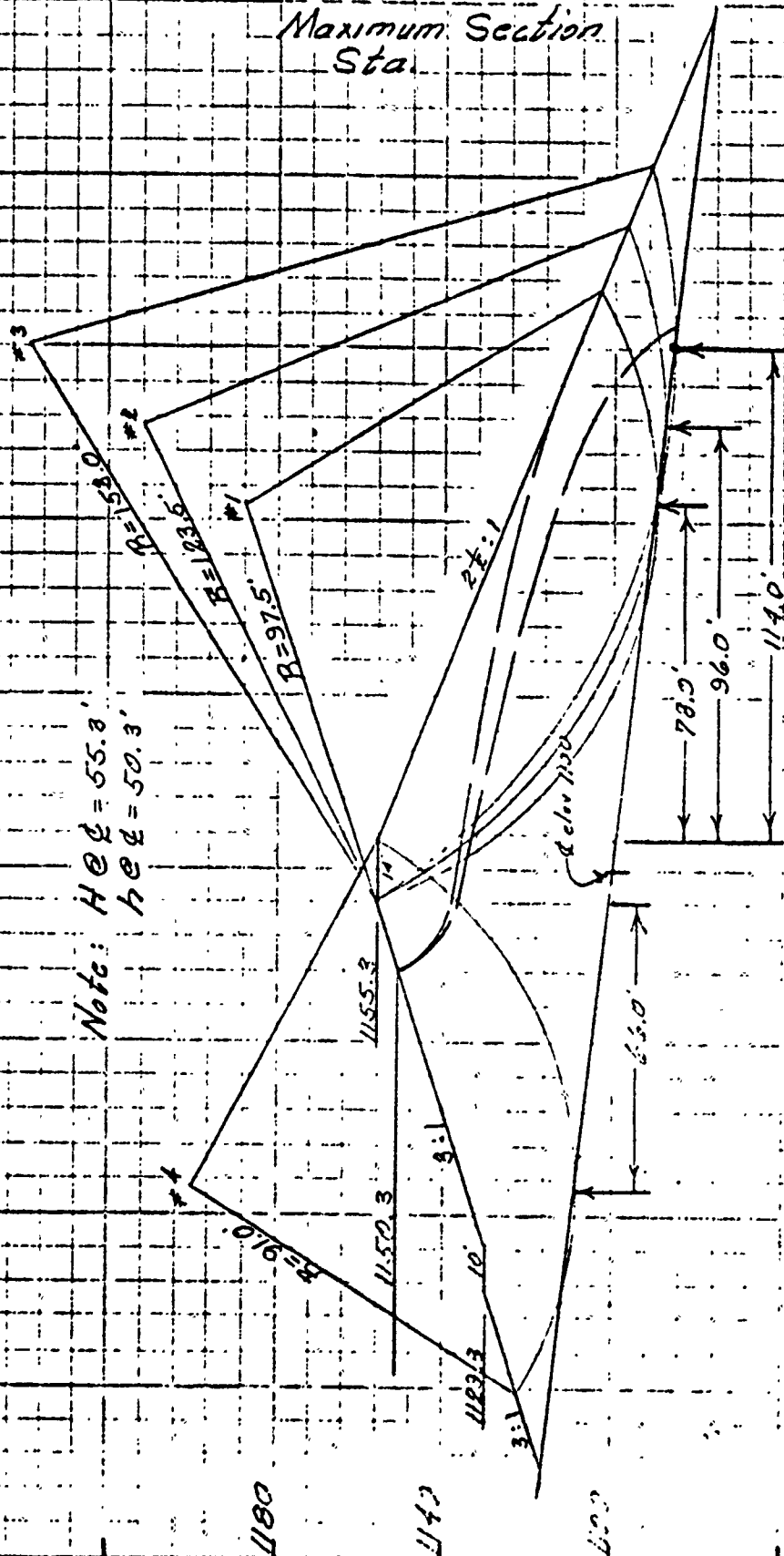
500-100

Sheet 2 of 2

(SCS-357)

Supplement to sheet 1 of 2
Trout Brook Site #2-C
New York

Maximum Section
Sta.



APPENDIX E

REFERENCES

APPENDIX E

REFERENCES

- 1) U.S. Department of Commerce; Weather Bureau;
Hydrometeorological Report No. 33 - Seasonal Variation of the Probable
Maximum Precipitation East of the 105th Meridian for Areas from 10 to
1,000 Square Miles and Durations of 6, 12, 24, and 48 Hours, April 1956.
- 2) H.W. King and E.F. Brater, Handbook of Hydraulics, 5th edition,
McGraw-Hill, 1963.
- 3) University of the State of New York, Geology of New York, Education
Leaflet 20, Reprinted 1973.
- 4) Elwyn E. Seelye, Design, 3rd edition, John Wiley and Sons, Inc., 1960.
- 5) U.S. Department of the Interior, Bureau of Reclamations;
Design of Small Dams, 2nd edition (rev. reprint), 1977.

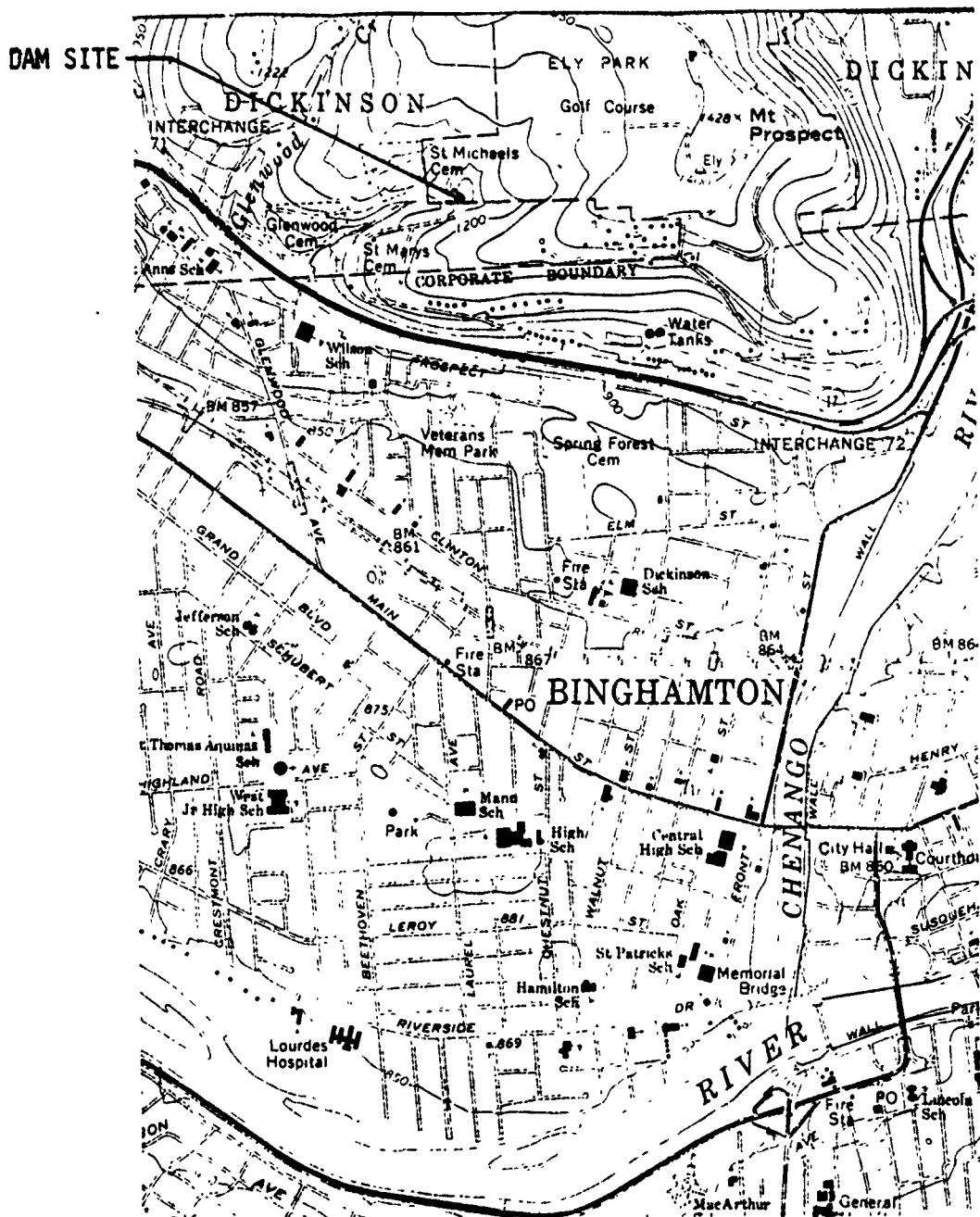
APPENDIX F

DRAWINGS

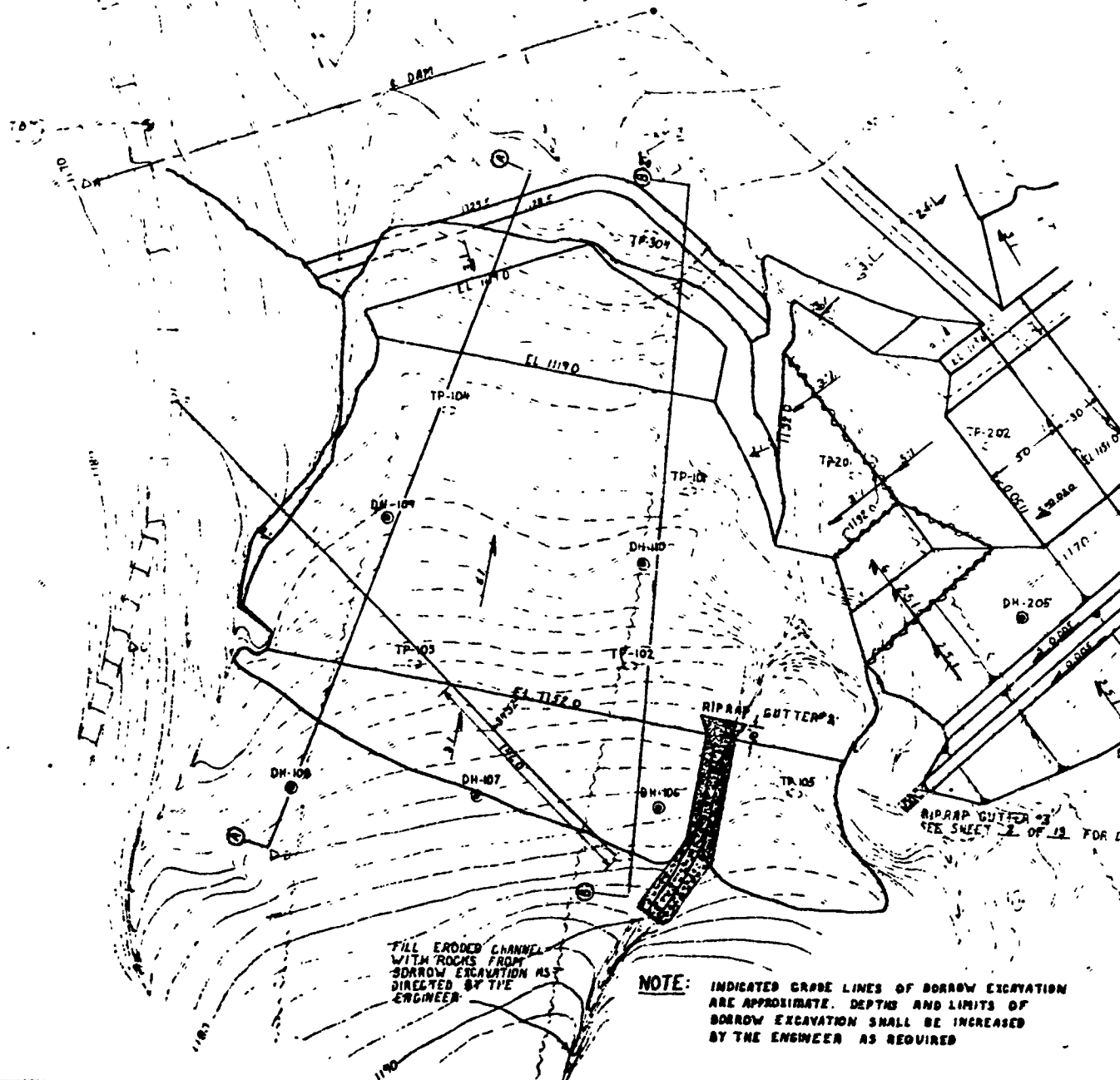
DAM SITE

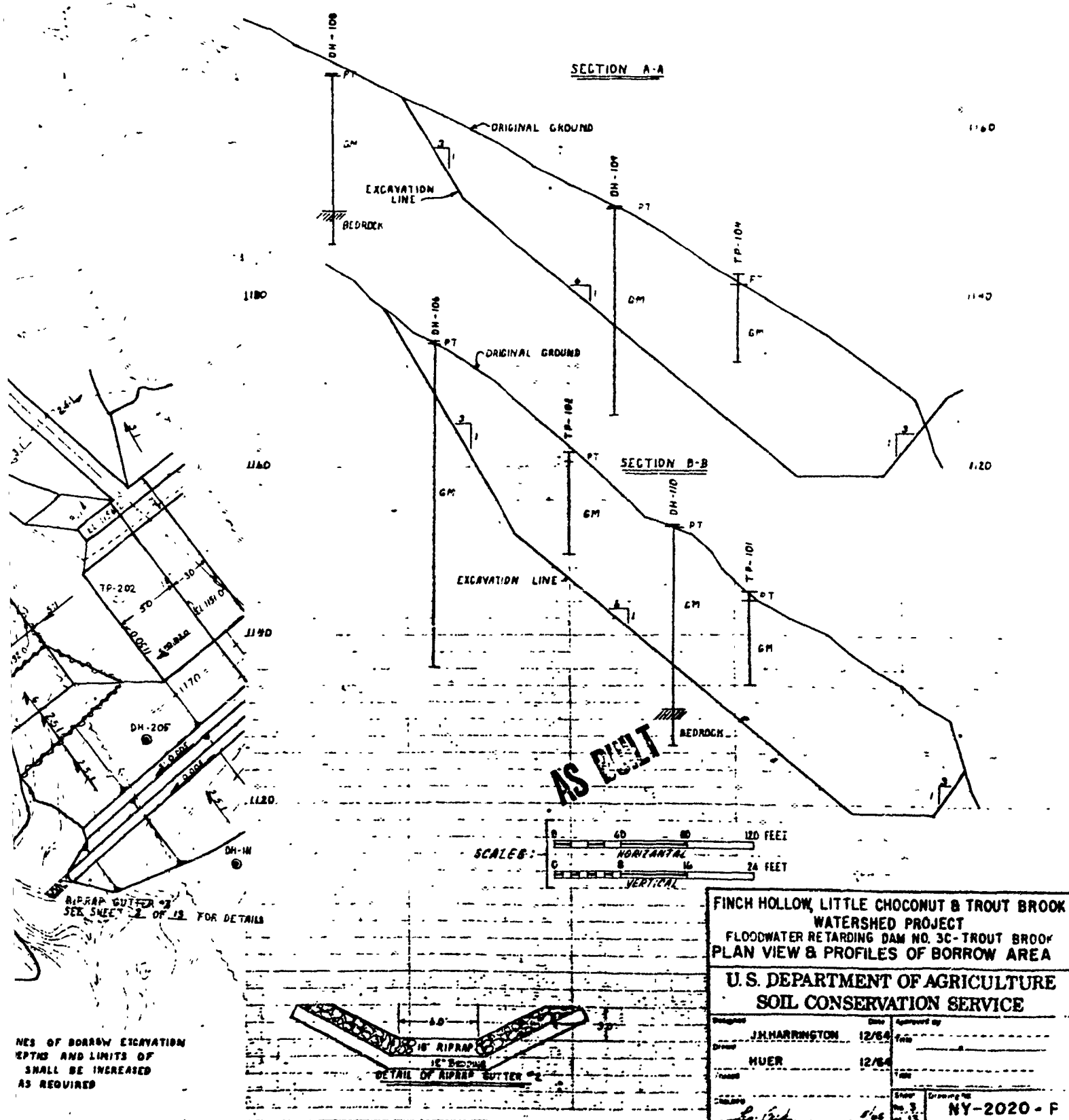


VICINITY MAP
FINCH HOLLOW WATERSHED PROJECT
SITE 3C
I.D. No. NY 724



TOPOGRAPHIC MAP
FINCH HOLLOW WATERSHED PROJECT
SITE 3C
I.D. No. NY 724

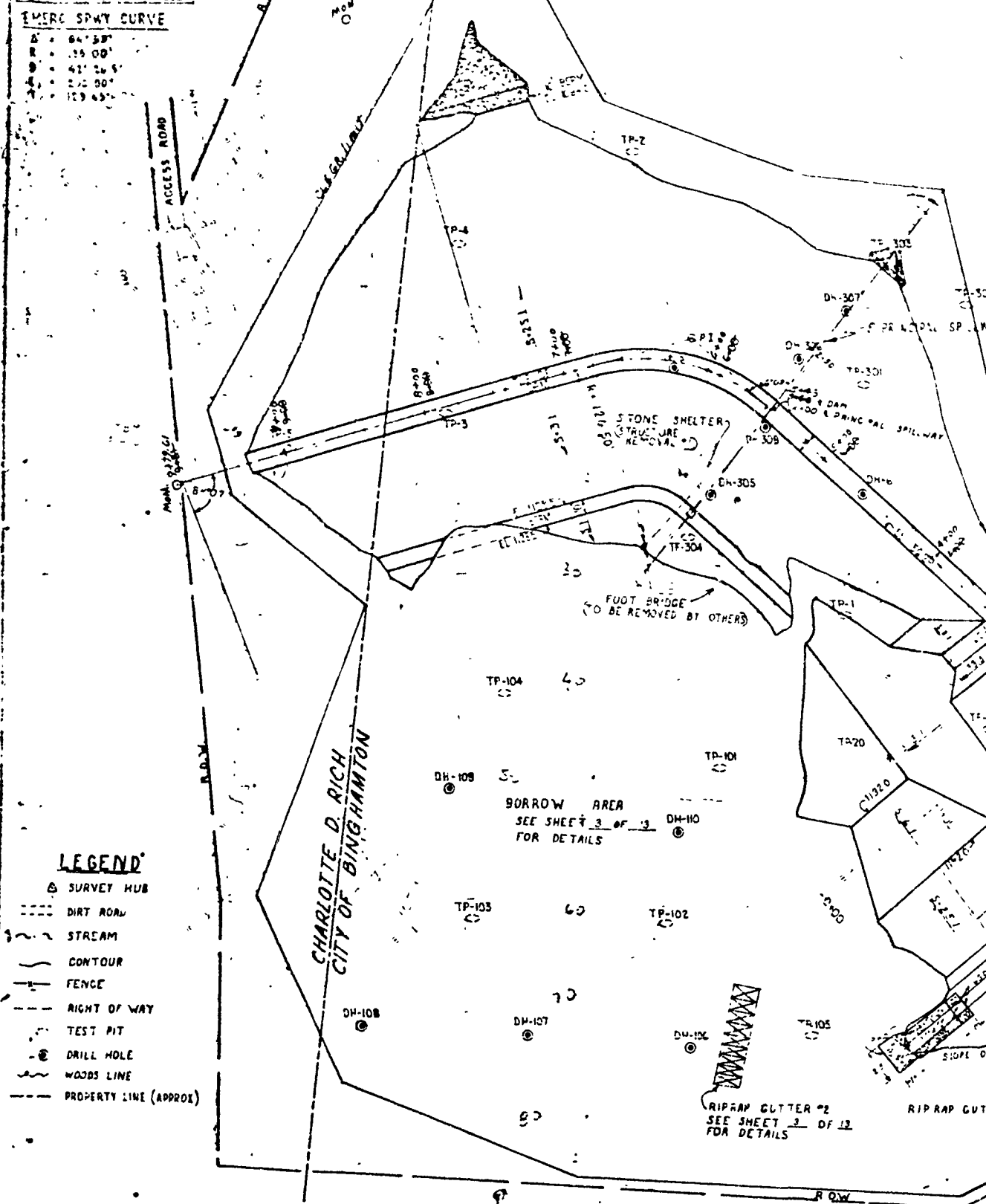




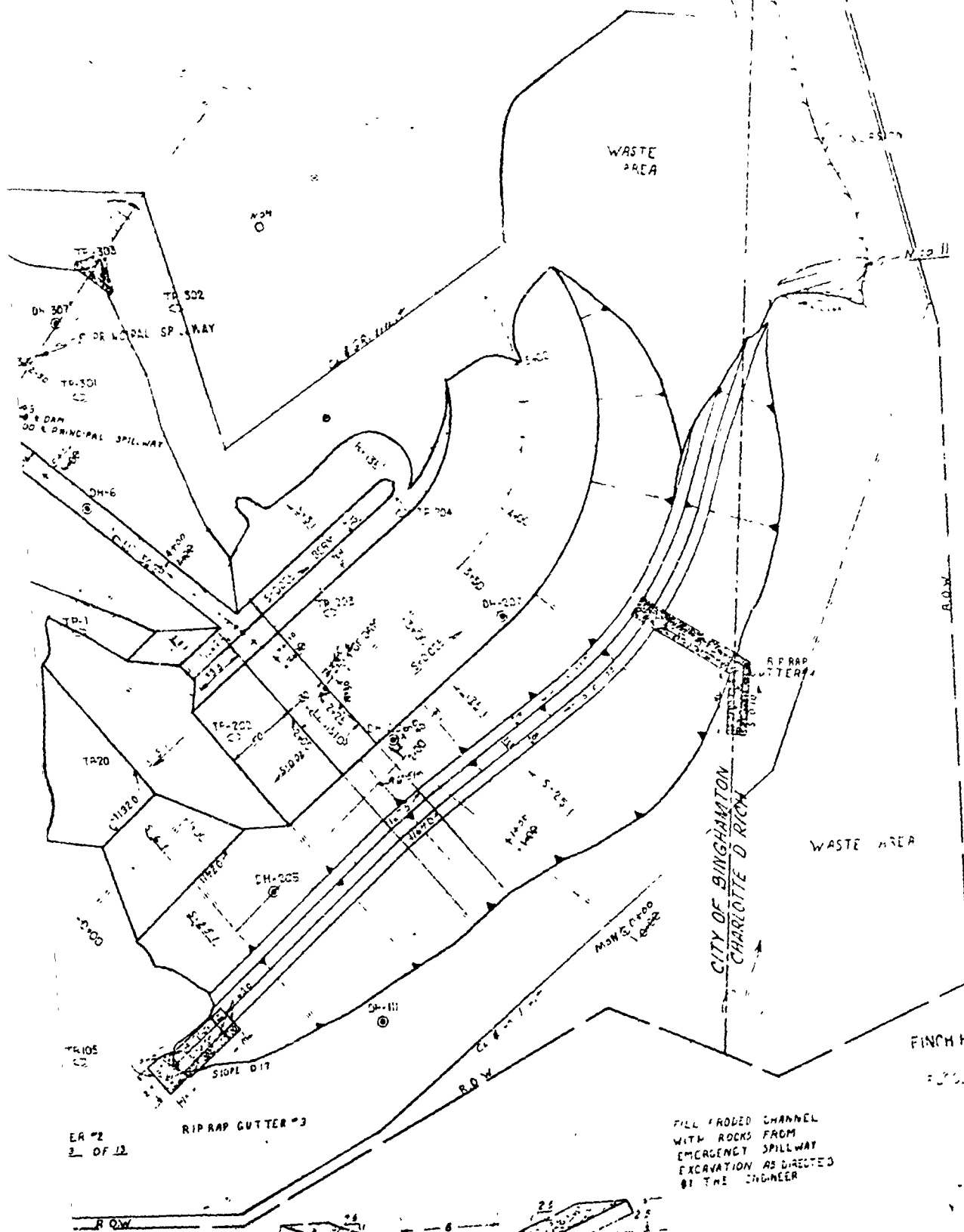
NOTES OF BORROW EXCAVATION
DEPTH AND LIMITS OF
SHALL BE INCREASED
AS REQUIRED

IMERC SPWT CURVE

Δ	64° 35'
R	135 00'
S	41° 26'
E	272 00'
T	129 45'



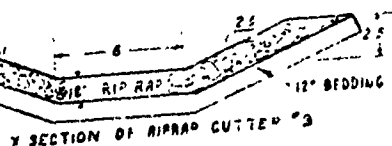
CITY OF BINGHAMTON



ER #2
2 OF 12

RIP RAP CUTTER #3

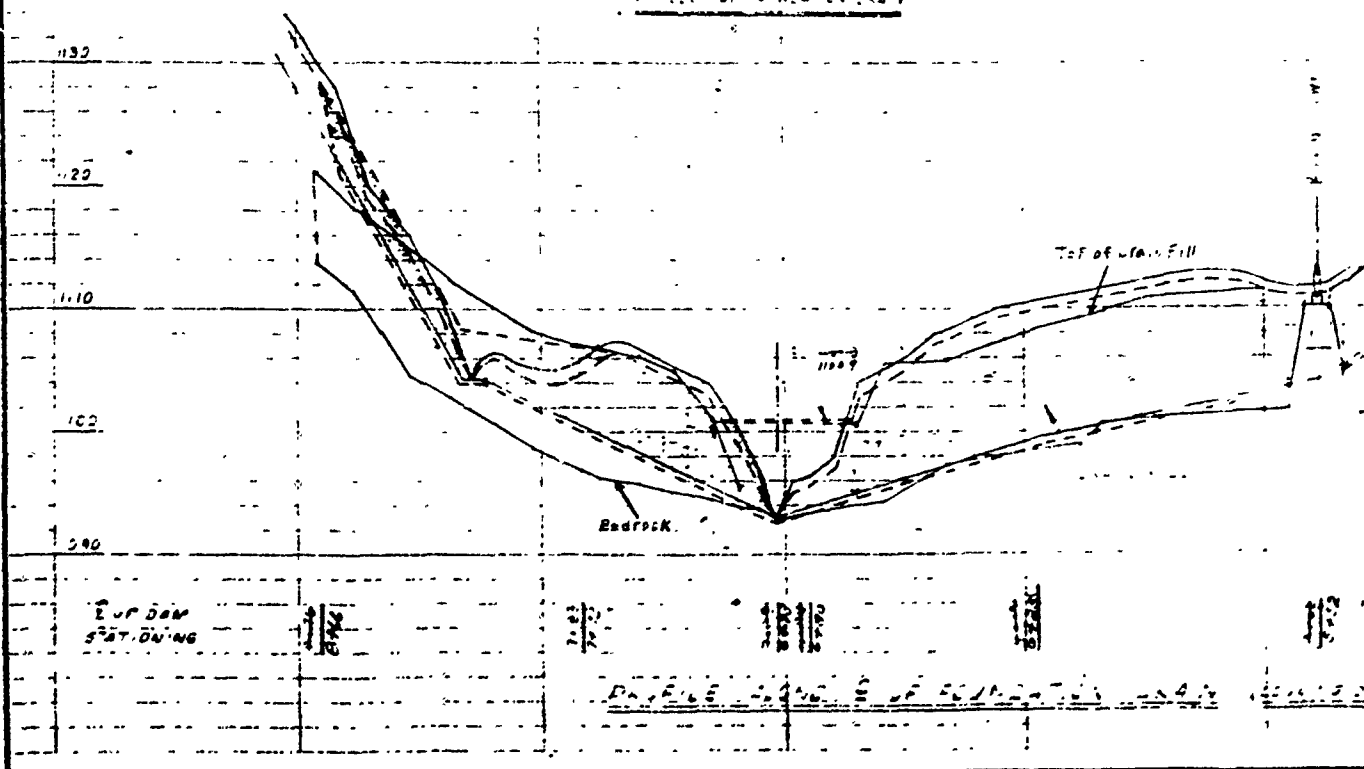
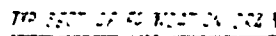
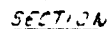
FILL FRODED CHANNEL
WITH ROCKS FROM
EMERGENCY SPILLWAY
EXCAVATION AS DIRECTED
BY THE ENGINEER

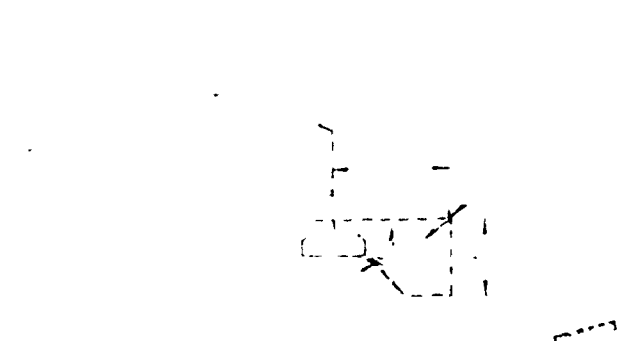
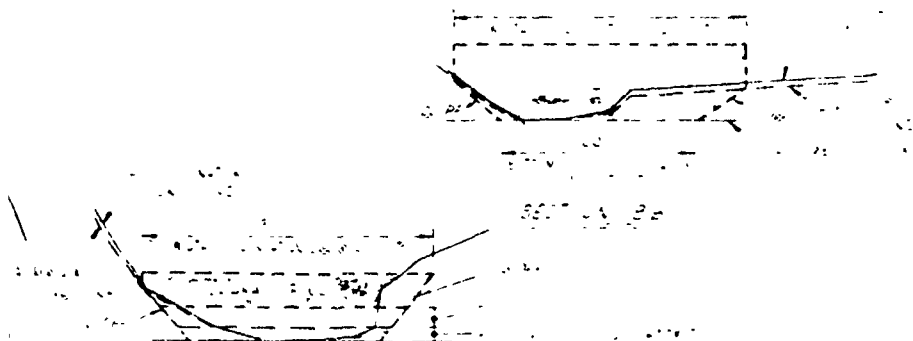
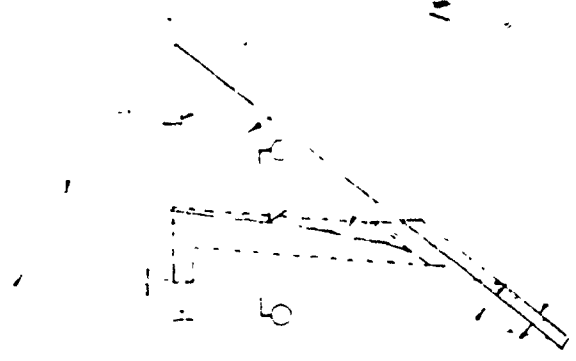
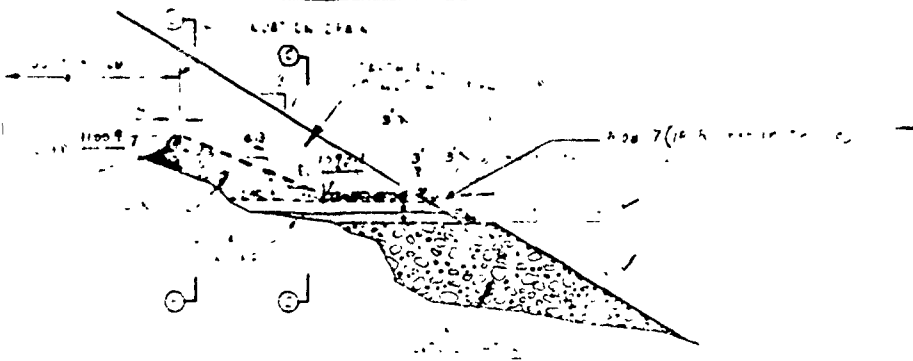


FINCH HOLLOW, LITTLE CHOCONUT & TROU
WATERSHED PROJECT
FLOOD CONTROL DISTRICT NO. 1
PLAN OF DAMSITE

BINGHAMTON 12/54
LTON & HUBB 12/54

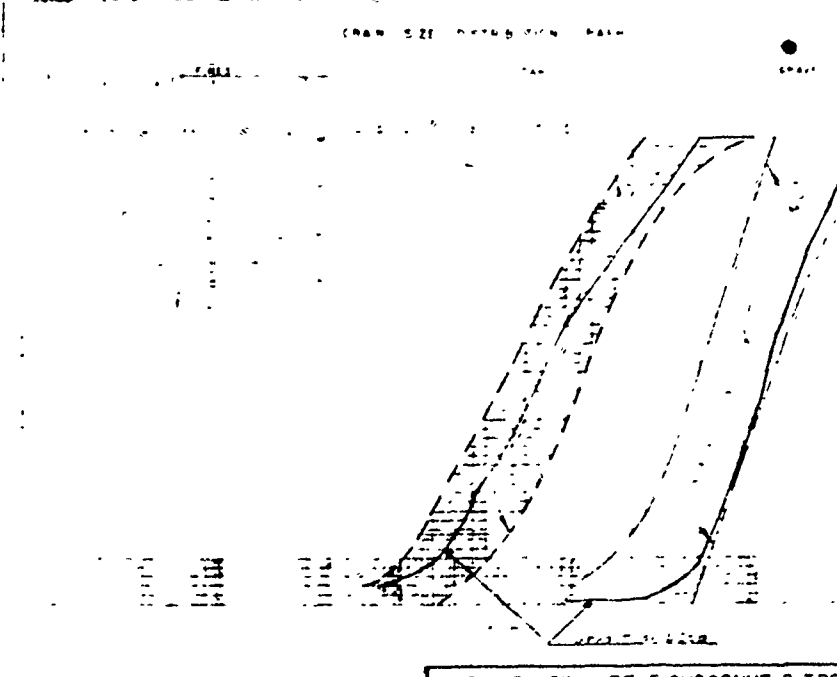
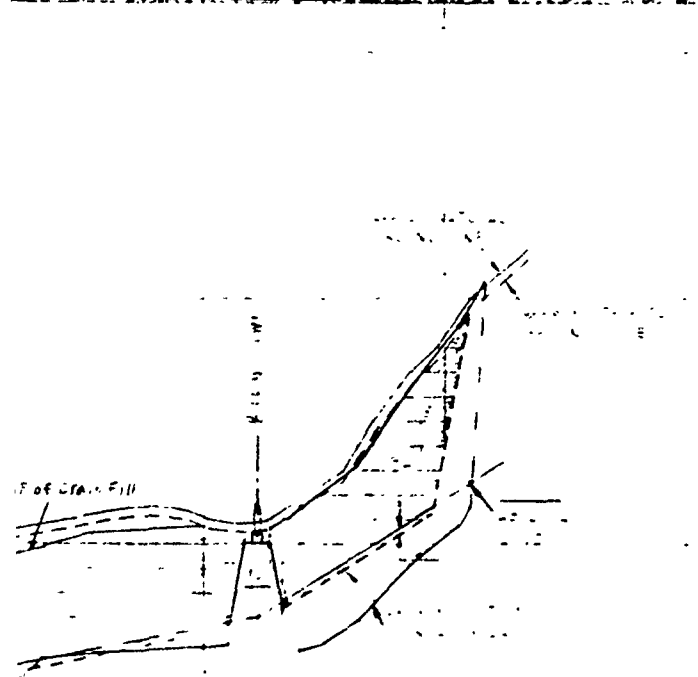
2



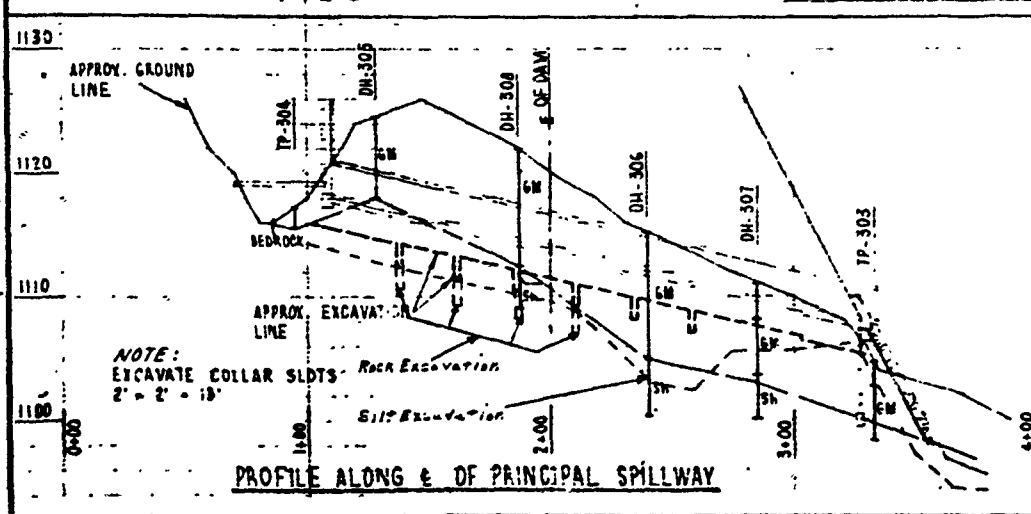
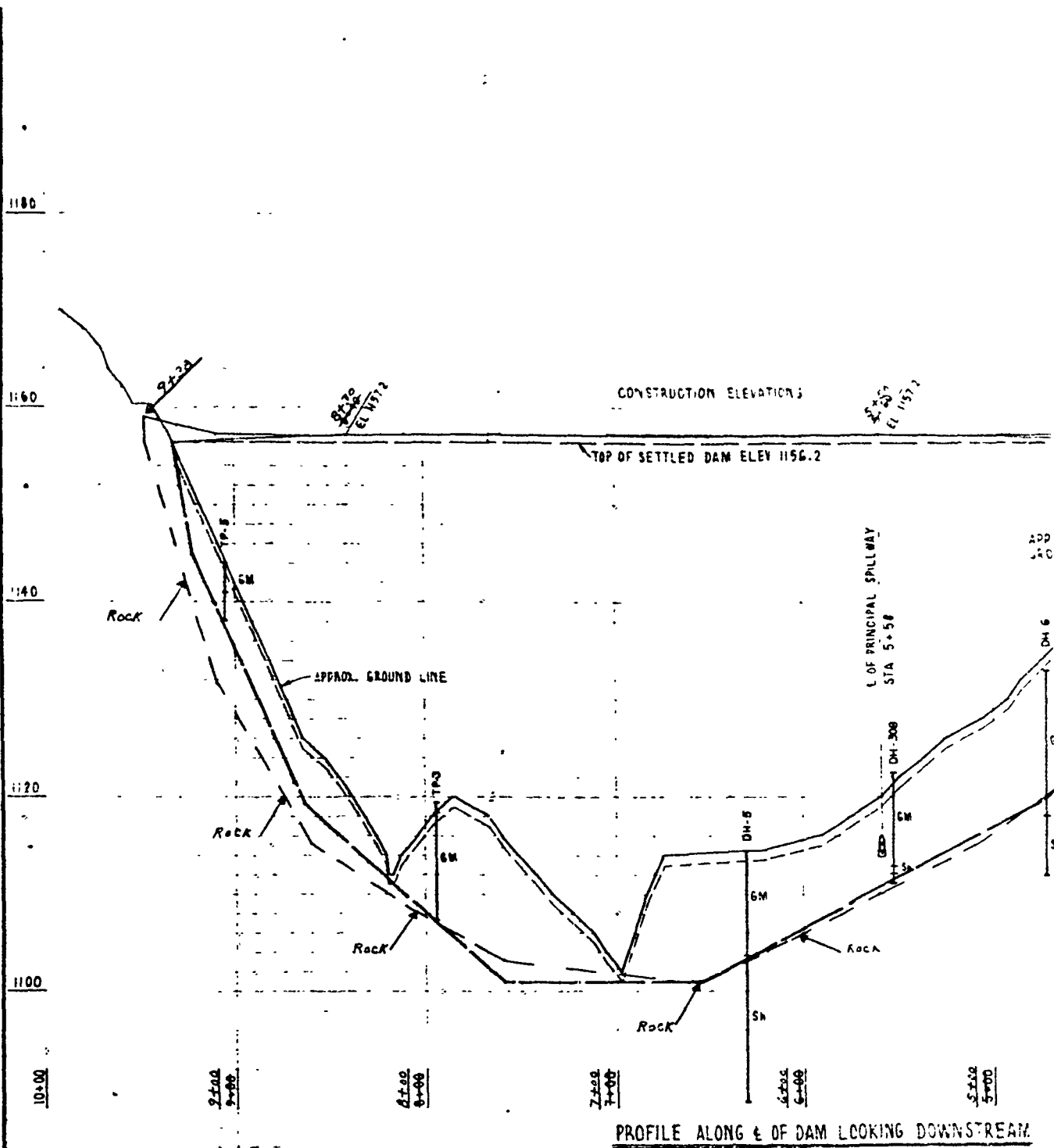


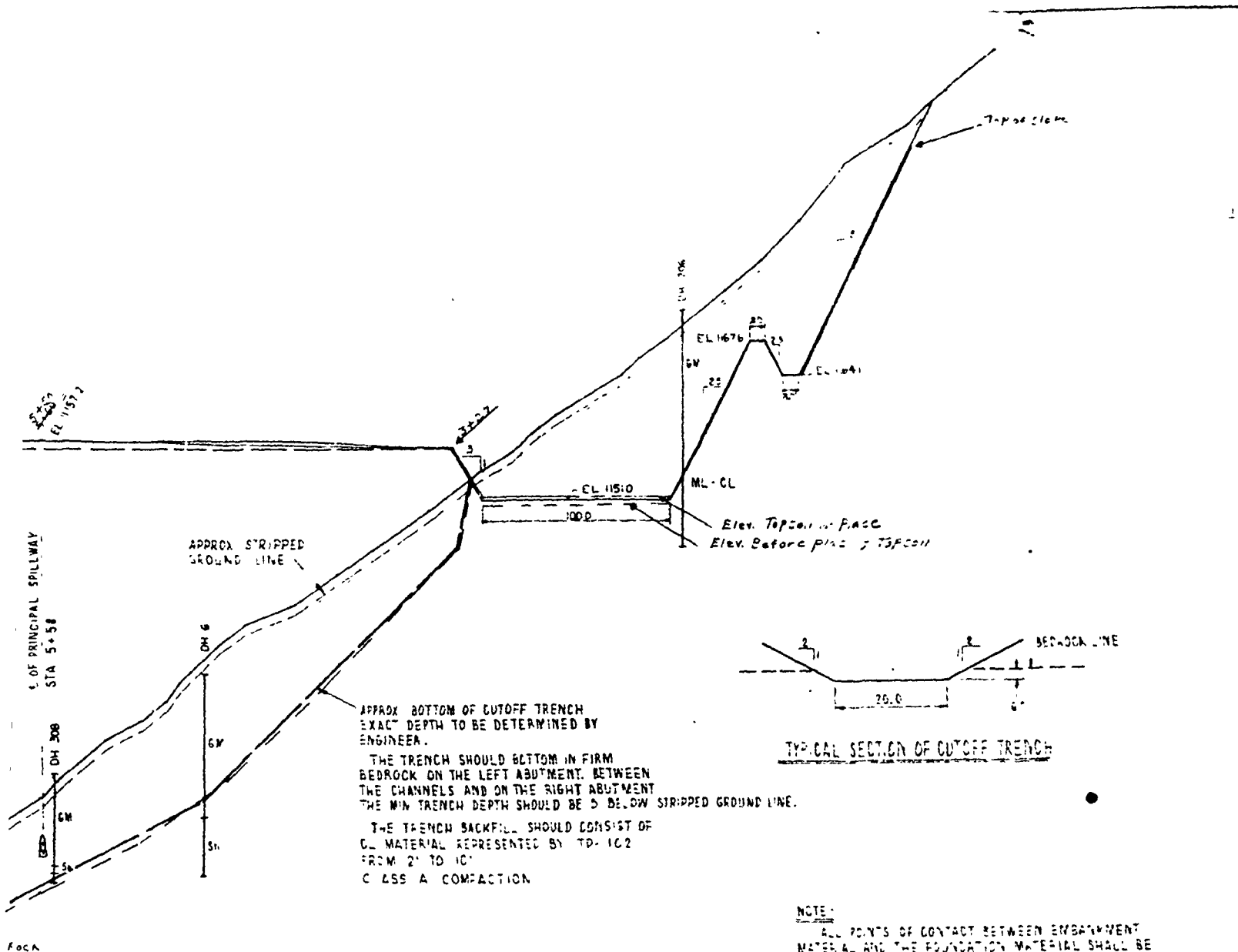
SECTION CC

SECTION DD



FINCH HOLLOW, LITTLE CHOCONUT & TROUT E
WATERSHED PROJECT
FLOODWATER RETENTION DAM NO. 20, TROUT E
DRAINAGE DETAILS
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE





5+50
5+00

4+00
4+00

3+00
3+00

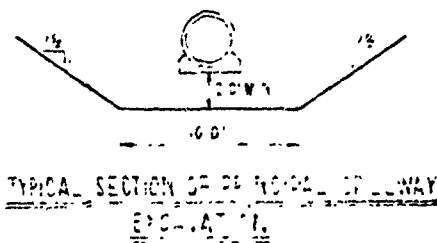
2+00
2+00

1+00
1+00

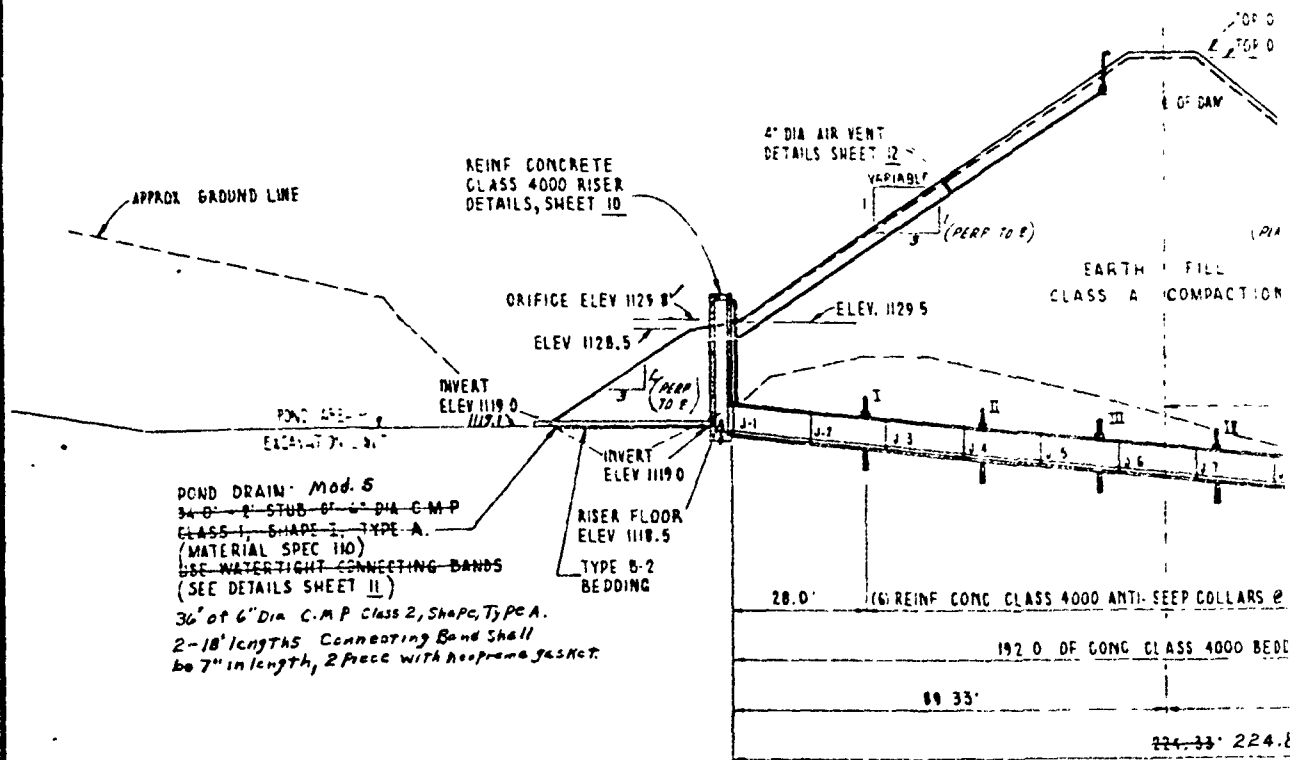
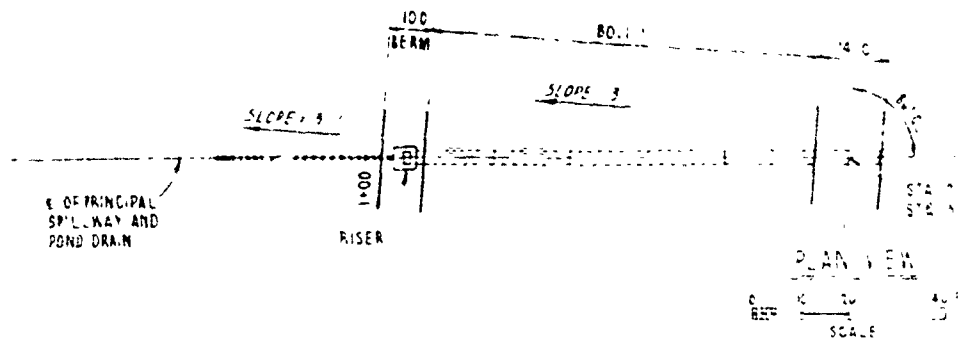
0+00
0+00

LOOKING DOWNSTREAM

AS PER

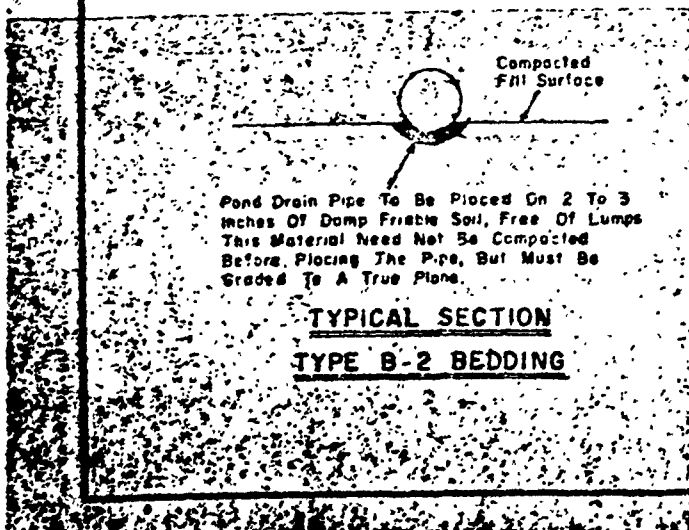
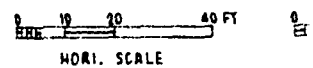


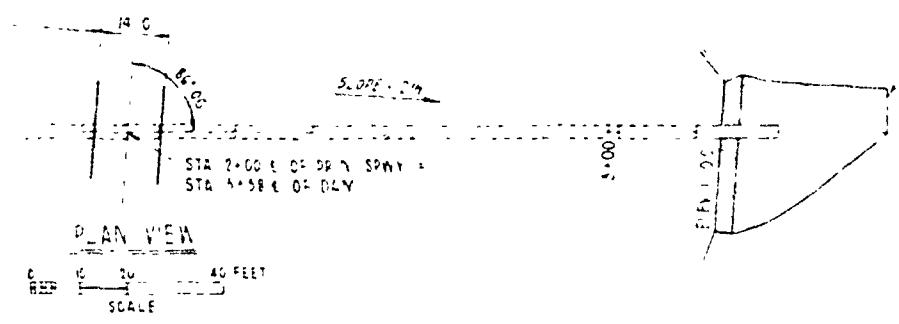
FINCH HOLLOW, LITTLE CHOCONUT & TROUT WATERSHED PROJECT	
FLOOD CONTROL - REPAIRING DAM NO. 3C - TROUT PROFILES	
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
BY J. HARRINGTON	12/64
BY D. ANGELO	12/64
DATE	12/64
PROJECT NO.	NY-20



POND DRAIN Mod. 5
 34.0' 2" STUB OF 6" DIA C.M.P.
 CLASS 1, SHAPE 1, TYPE A.
 (MATERIAL SPEC 110)
 USE WATER TIGHT CONNECTING BANDS
 (SEE DETAILS SHEET 11)
 36" of 6" Dia C.M.P. Class 2, Shape, Type A.
 2-18' LENGTHS Connecting Band Shall
 be 7" in length, 2 piece with neoprene gasket.

PROFILE ALONG E OF PR

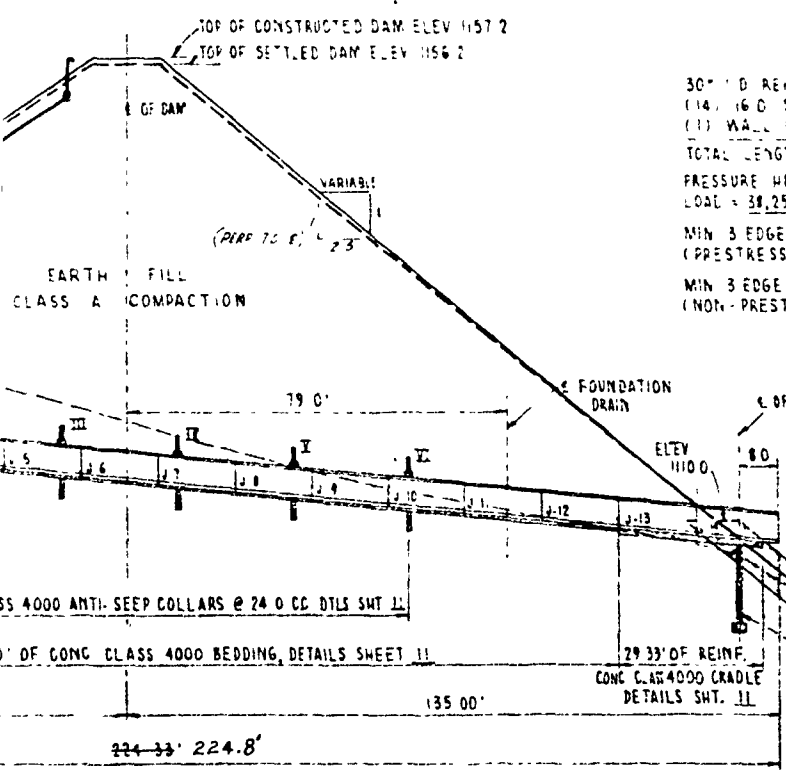




COLLAR	NO	DISTANCE FROM INVERT E. WALL FITTING OF 30" DIA	INVERT E. OF 30" DIA
I	1	0	1117.0
II	2	16	1116.0
III	3	32	1114.9
IV	4	48	1112.6
V	5	64	1111.1
VI	6	80	1109.6
VII	7	96	1108.0
VIII	8	112	1106.5
IX	9	128	1105.0
X	10	144	1103.5
XI	11	160	1102.0
XII	12	176	1100.5
XIII	13	192	1099.0
XIV	14	208	1097.5
XV	15	224	1096.0

NOTE: ABOVE DIMENSIONS FOR LE... ARE BASED ON NOMINAL LE... AND DO NOT INCLUDE CREEP

COLLAR	NO	DISTANCE FROM INVERT E. WALL FITTING OF 30" DIA	INVERT E. OF 30" DIA
I	1	0	1117.0
II	2	16	1116.0
III	3	32	1114.9
IV	4	48	1112.6
V	5	64	1111.1
VI	6	80	1109.6
VII	7	96	1108.0
VIII	8	112	1106.5
IX	9	128	1105.0
X	10	144	1103.5
XI	11	160	1102.0
XII	12	176	1100.5
XIII	13	192	1099.0
XIV	14	208	1097.5
XV	15	224	1096.0

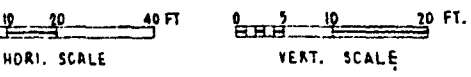


30" ID REINF CONC WATER PIPE
(14.160 SECTIONS)
(1) WALL FITTING FOR 2" WALL
TOTAL LENGTH - 225.33'
PRESSURE HEAD - 45.3
LOAD - 38,250 LBS PER LIN FT BASED ON OD OF 3.23
MIN 3 EDGE BEARING STRENGTH FOR 0.001" CRACK
(PRESTRESSED PIPE AWWA C301) = 13,810 LBS PER LIN FT
MIN 3 EDGE BEARING STRENGTH FOR 0.01" CRACK
(NON-PRESTRESSED PIPE AWWA C302) = 18,370 LBS PER LIN FT

PIPE SUPPLIERS NOTE:
CAST OUTSIDE OF SP.60T JOIN WITH CONCRETE ON ONE SECTION

AS BUILT

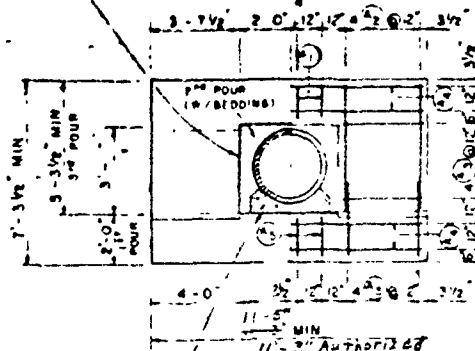
PROFILE ALONG E. OF PRINCIPAL SPILLWAY



RIPRAP NOTE:
HANDPLACED LOOSE RIPRAP SHALL BE WELL GRADED FROM A MIN SIZE OF 3" TO A MAX SIZE OF 24"

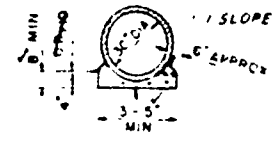
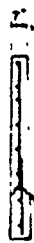
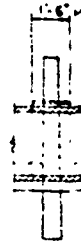
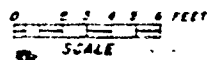
FINCH HOLLOW, LITTLE CHOCONUT & TRC WATERSHED PROJECT			
FLOODWATER RETARDING DAM NO 3C-TROL			
PLAN-PROFILE OF PRINCIPAL SPILLWAY			
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
Designed by <i>San Jack</i>	Date 5/65	Approved by Title	
Checked by W. H. MOAGAN	Date 5/65	Approved by Title	
Drawn by <i>Bob Johnson</i>	Date 5/65	Approved by Title	
Sheet No 9 of 13	Project No NY -		

1/2" PREFORMED JOINT FILLER
1/2" WIDE
(MATERIAL SPEC 106)

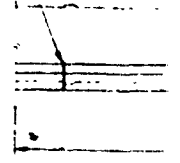


FINISH COLLAR SURFACE TRUE AND SMOOTH PLACE
1/4" x 10" x 4'-0" STEEL OR WROUGHT IRON PLATE
UNDER BEDDING BITUMINOUS COATED ON BOTH SIDES.

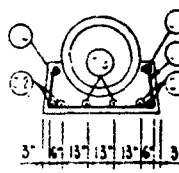
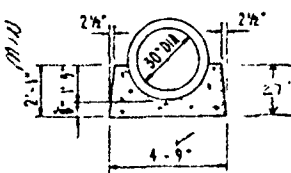
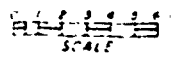
REINFORCED CONCRETE ANTI-SEEP COLLAR DETAILS (6)



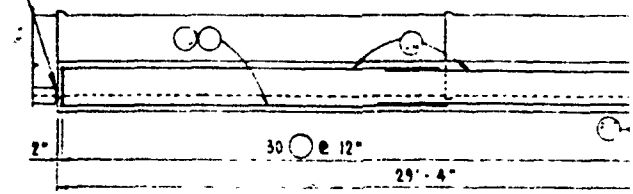
1/2" PREFORMED JOINT
FILLER AT EACH PIPE JOINT. 1
SPEC 106



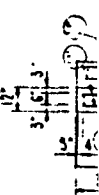
CONCRETE BEDDING



1/2" PREFORMED JOINT
FILLER (M&T SPEC 106)



REINFORCED CONCRETE CRADLE AND BENT DETAILS



ADD 1 HOUR TO 100' OF
1" x 10" JOINT FILLER
BETWEEN JOINTS AND 1 HOUR TO
BENT

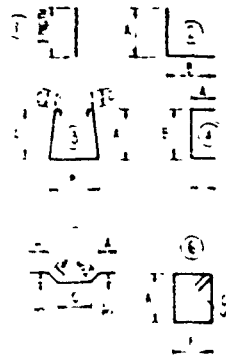
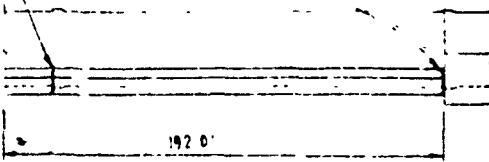
SEE SPECIAL NOTE CONCERNING
BENT TO BE 100' LONG FROM
END OF THE BENT TO A
BENT OR JOINT

BAR TYPES

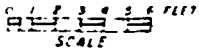
STEEL SCHEDULE

1/2" PREFORMED JOINT FILLER
AT EACH PIPE JOINT MATERIAL
SPEC 106

1 SLOPE
6" SLOPE

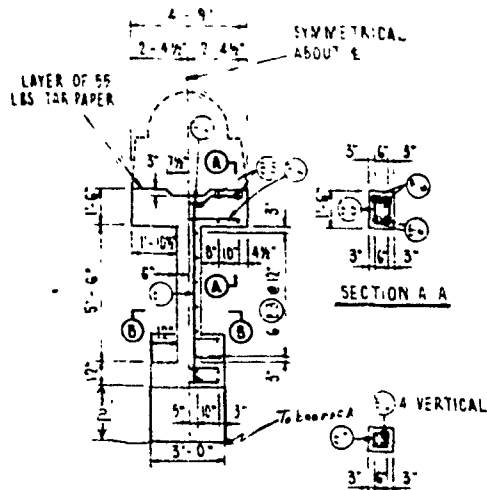
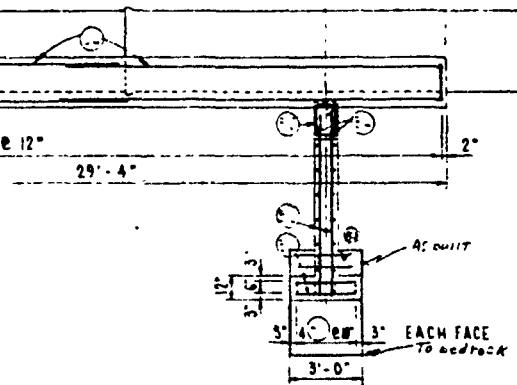


CONCRETE BEDDING DETAILS



E OF BENT

8'-0"
3'-0"



SECTION B-B

TOTAL QUANTITIES FOR PROJECT

REINFORCING STEEL

NO. 2 BARS	✓	1.4	FT	5.4	LBS
NO. 4 BARS	✓	1.4	FT	5.4	LBS
NO. 5 BARS	✓	1.4	FT	5.4	LBS
NO. 6 BARS	✓	1.4	FT	5.4	LBS
NO. 7 BARS	✓	1.4	FT	5.4	LBS
NO. 9 BARS	✓	1.4	FT	5.4	LBS
TOTAL					5.4 LBS

CONCRETE

CLASS 4000, REINFORCED	27.8	CU YDS
CLASS 4000, NON-REINFORCED	14.1	CU YDS

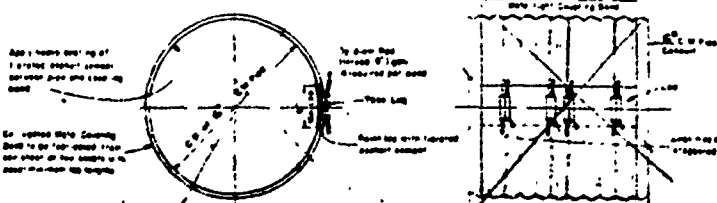
GENERAL NOTES

1. ALL REINFORCING STEEL SHALL BE PLACED IN CONCRETE
2. ALL REINFORCING STEEL SHALL HAVE A MINIMUM OF 1/4" CLEAR COVER
3. ALL REINFORCING STEEL SHALL HAVE A MINIMUM OF 1/4" CLEAR COVER
4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM OF 1/4" CLEAR COVER

3. PORTLAND CEMENT TYPE I
WITH AN AIR-ENTRAINING ADMIXTURE
OR TYPE IA SHALL BE USED

AS BUILT

DETAIL OF TANK LUG



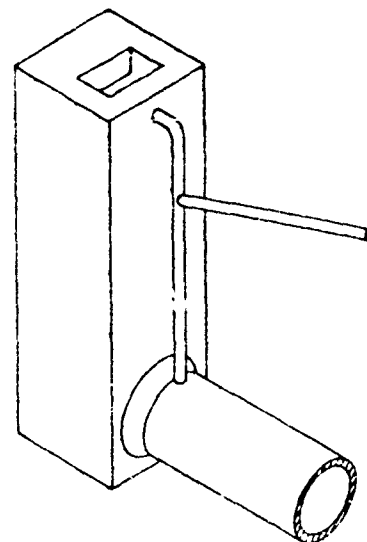
DETAILS OF WATER-TIGHT COUPLING BAND

FINCH HOLLOW, LITTLE CHOCONUT & TROUT
WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 3C-TROUT B
CRADLE, COLLAR, BENT AND STEEL SCHE

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed L R BECK	Date May 65	Approved By Title
Checked W H MORGAN	Date MAY 65	Approved By Title
Drawn C. J. GUNN	Date 5/65	Sheet No 11 of 13

NY-202

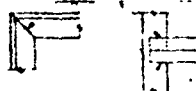


See Drawing No. E-4-1892 Mod. No. 1

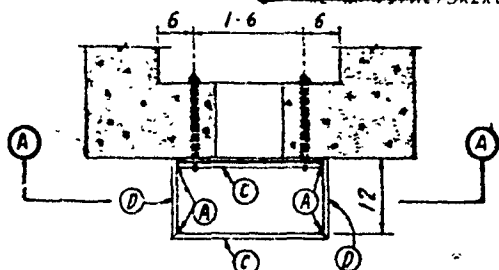
NOTE: SEE DRAWING NO. E-4-1892 MOD. NO. 1
THIS WILL BE DRILLED THROUGH CONCRETE PRESSURE PIPE
AFTER THE PIPE HAS BEEN LAID IN PLACE. ALL WORK
BE PERFORMED IN ACCORDANCE WITH MANUFACTURERS
RECOMMENDATIONS AND UNDER THE DIRECT SUPERVISION
OF THE MANUFACTURERS REPRESENTATIVE.

NOTE: ALL POINTS OF CONTACT
BETWEEN ANGLE IRON TO BE WELDED

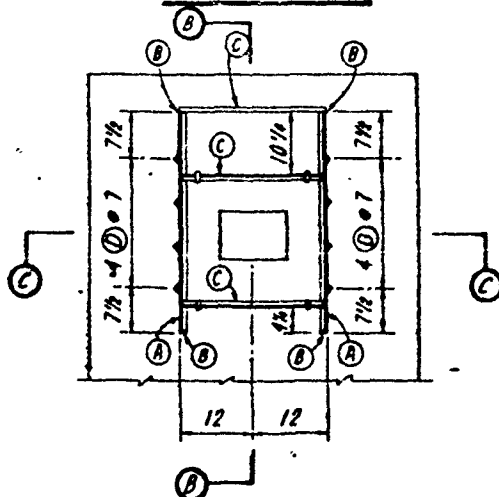
ISOMETRIC



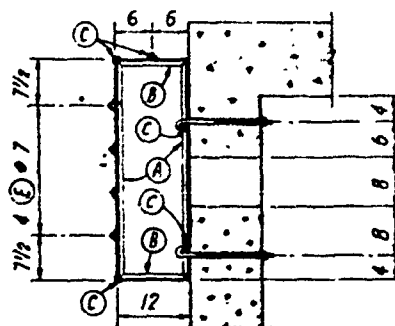
WELDING DETAILS



SECTION C-C



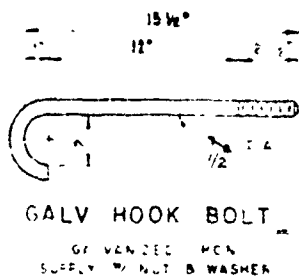
SECTION A-A



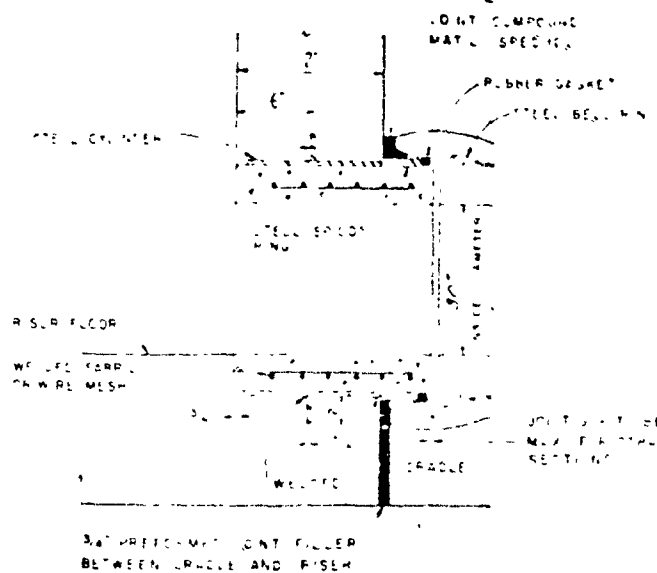
SECTION B-B

NOTE
ENTIRE TRASH BACK TO BE
BALANCED IN ACCORDANCE WITH
WTH SPEC 119

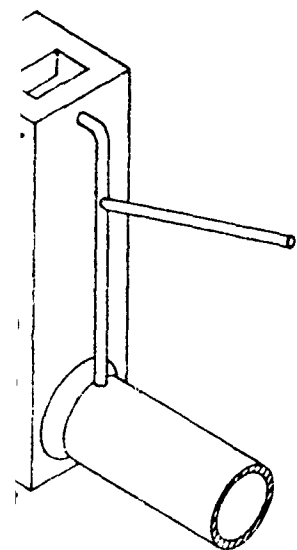
TRASH RACK DETAILS



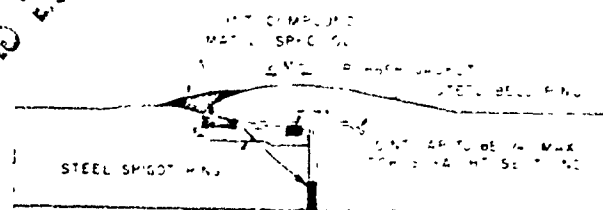
WATER STOP AND
STIFFENER RING



SPIGOT RING WALL FITTING



AS BUILT



NOTE:
INSTALL AFTER PIPE
IS IN ITS FINAL
LOCATION AND AFTER
POSITION HAS BEEN
CHECKED. JOINT
COMPOUND TO BE
PLACED IN LOWER HALF
OF PIPE ONLY.

DETAIL OF REINFORCED
CONCRETE WATER PIPE JOINT

BILL OF MATERIAL

LOCATION	ITEM	SIZE	LENGTH	QUANTITY
TRASH RACK	45° ANGLE IRON	1" x 1" x 1/4"	8' 0"	4
	45°		1' 0"	4
	45°		1' 11 1/2"	4
	45°		1' 0"	4
A.R. VEAT	GALV. PIPE SLEEVE	3.6" O.D.	2' 11 1/2"	4
	45° BOLT "1/2" x 1/4" WASHER 64	1/2" DIA	1' 3 1/2"	4
	64.5 S.D. 5/8" PIPE	4" O.D.	8' 0"	1
	180° ELBOW GALV	4" O.D.		1
	90° ELBOW GALV	4" O.D.		1
	CAP SCREEN GALV	4" O.D.		1
		2" x 2" x 1/4"	100' - 6"	

NOTE:
ENTIRE TRASH RACK TO BE
GALVANIZED IN ACCORDANCE WITH
W.T.H. SPEC. 1.9

FINCH HOLLOW, LITTLE CHOCONUT & TROUT E
WATERSHED PROJECT

FLOODWATER RETARDING DAM NO. 30 - TROUT E
TRASH RACK, VENTING TUBE & MISC DET

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Low Beck 5/65
W.H. MORDEN May 65

Ben Serrano 5/65 12 NY-20

2 1/2, 1948, L.V. 225.6

2P - 0. 100' 112, blunders & scattered rub.
 - 3.0' here, well sorted & fairly light
 3P - 1.0' fine - typical t. texture - brown
 4P - 1.0' mist - slowly permeable - blackish
 5P - 1.0' thin, bluish-gray drift - very dense.
 - 2.0' here, some small sandstone & shale
 6P - 1.0' stone - all fractured at surface,
 7P - 1.0' reaching to bed, at bottom of sand -
 8P - 1.0' grain - not actual bedding - fine sand
 9P - 1.0' formation of gray clay - mod.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

4. 3V. 10.0. 11.0. 12.0. 13.0. 14.0. 15.0. 16.0. 17.0. 18.0. 19.0. 20.0. 21.0. 22.0. 23.0. 24.0. 25.0. 26.0. 27.0. 28.0. 29.0. 30.0. 31.0. 32.0. 33.0. 34.0. 35.0. 36.0. 37.0. 38.0. 39.0. 40.0. 41.0. 42.0. 43.0. 44.0. 45.0. 46.0. 47.0. 48.0. 49.0. 50.0. 51.0. 52.0. 53.0. 54.0. 55.0. 56.0. 57.0. 58.0. 59.0. 60.0. 61.0. 62.0. 63.0. 64.0. 65.0. 66.0. 67.0. 68.0. 69.0. 70.0. 71.0. 72.0. 73.0. 74.0. 75.0. 76.0. 77.0. 78.0. 79.0. 80.0. 81.0. 82.0. 83.0. 84.0. 85.0. 86.0. 87.0. 88.0. 89.0. 90.0. 91.0. 92.0. 93.0. 94.0. 95.0. 96.0. 97.0. 98.0. 99.0. 100.0. 101.0. 102.0. 103.0. 104.0. 105.0. 106.0. 107.0. 108.0. 109.0. 110.0. 111.0. 112.0. 113.0. 114.0. 115.0. 116.0. 117.0. 118.0. 119.0. 120.0. 121.0. 122.0. 123.0. 124.0. 125.0. 126.0. 127.0. 128.0. 129.0. 130.0. 131.0. 132.0. 133.0. 134.0. 135.0. 136.0. 137.0. 138.0. 139.0. 140.0. 141.0. 142.0. 143.0. 144.0. 145.0. 146.0. 147.0. 148.0. 149.0. 150.0. 151.0. 152.0. 153.0. 154.0. 155.0. 156.0. 157.0. 158.0. 159.0. 160.0. 161.0. 162.0. 163.0. 164.0. 165.0. 166.0. 167.0. 168.0. 169.0. 170.0. 171.0. 172.0. 173.0. 174.0. 175.0. 176.0. 177.0. 178.0. 179.0. 180.0. 181.0. 182.0. 183.0. 184.0. 185.0. 186.0. 187.0. 188.0. 189.0. 190.0. 191.0. 192.0. 193.0. 194.0. 195.0. 196.0. 197.0. 198.0. 199.0. 200.0. 201.0. 202.0. 203.0. 204.0. 205.0. 206.0. 207.0. 208.0. 209.0. 210.0. 211.0. 212.0. 213.0. 214.0. 215.0. 216.0. 217.0. 218.0. 219.0. 220.0. 221.0. 222.0. 223.0. 224.0. 225.0. 226.0. 227.0. 228.0. 229.0. 230.0. 231.0. 232.0. 233.0. 234.0. 235.0. 236.0. 237.0. 238.0. 239.0. 240.0. 241.0. 242.0. 243.0. 244.0. 245.0. 246.0. 247.0. 248.0. 249.0. 250.0. 251.0. 252.0. 253.0. 254.0. 255.0. 256.0. 257.0. 258.0. 259.0. 260.0. 261.0. 262.0. 263.0. 264.0. 265.0. 266.0. 267.0. 268.0. 269.0. 270.0. 271.0. 272.0. 273.0. 274.0. 275.0. 276.0. 277.0. 278.0. 279.0. 280.0. 281.0. 282.0. 283.0. 284.0. 285.0. 286.0. 287.0. 288.0. 289.0. 290.0. 291.0. 292.0. 293.0. 294.0. 295.0. 296.0. 297.0. 298.0. 299.0. 300.0. 301.0. 302.0. 303.0. 304.0. 305.0. 306.0. 307.0. 308.0. 309.0. 310.0. 311.0. 312.0. 313.0. 314.0. 315.0. 316.0. 317.0. 318.0. 319.0. 320.0. 321.0. 322.0. 323.0. 324.0. 325.0. 326.0. 327.0. 328.0. 329.0. 330.0. 331.0. 332.0. 333.0. 334.0. 335.0. 336.0. 337.0. 338.0. 339.0. 340.0. 341.0. 342.0. 343.0. 344.0. 345.0. 346.0. 347.0. 348.0. 349.0. 350.0. 351.0. 352.0. 353.0. 354.0. 355.0. 356.0. 357.0. 358.0. 359.0. 360.0. 361.0. 362.0. 363.0. 364.0. 365.0. 366.0. 367.0. 368.0. 369.0. 370.0. 371.0. 372.0. 373.0. 374.0. 375.0. 376.0. 377.0. 378.0. 379.0. 380.0. 381.0. 382.0. 383.0. 384.0. 385.0. 386.0. 387.0. 388.0. 389.0. 390.0. 391.0. 392.0. 393.0. 394.0. 395.0. 396.0. 397.0. 398.0. 399.0. 400.0. 401.0. 402.0. 403.0. 404.0. 405.0. 406.0. 407.0. 408.0. 409.0. 410.0. 411.0. 412.0. 413.0. 414.0. 415.0. 416.0. 417.0. 418.0. 419.0. 420.0. 421.0. 422.0. 423.0. 424.0. 425.0. 426.0. 427.0. 428.0. 429.0. 430.0. 431.0. 432.0. 433.0. 434.0. 435.0. 436.0. 437.0. 438.0. 439.0. 440.0. 441.0. 442.0. 443.0. 444.0. 445.0. 446.0. 447.0. 448.0. 449.0. 450.0. 451.0. 452.0. 453.0. 454.0. 455.0. 456.0. 457.0. 458.0. 459.0. 460.0. 461.0. 462.0. 463.0. 464.0. 465.0. 466.0. 467.0. 468.0. 469.0. 470.0. 471.0. 472.0. 473.0. 474.0. 475.0. 476.0. 477.0. 478.0. 479.0. 480.0. 481.0. 482.0. 483.0. 484.0. 485.0. 486.0. 487.0. 488.0. 489.0. 490.0. 491.0. 492.0. 493.0. 494.0. 495.0. 496.0. 497.0. 498.0. 499.0. 500.0. 501.0. 502.0. 503.0. 504.0. 505.0. 506.0. 507.0. 508.0. 509.0. 510.0. 511.0. 512.0. 513.0. 514.0. 515.0. 516.0. 517.0. 518.0. 519.0. 520.0. 521.0. 522.0. 523.0. 524.0. 525.0. 526.0. 527.0. 528.0. 529.0. 530.0. 531.0. 532.0. 533.0. 534.0. 535.0. 536.0. 537.0. 538.0. 539.0. 540.0. 541.0. 542.0. 543.0. 544.0. 545.0. 546.0. 547.0. 548.0. 549.0. 550.0. 551.0. 552.0. 553.0. 554.0. 555.0. 556.0. 557.0. 558.0. 559.0. 560.0. 561.0. 562.0. 563.0. 564.0. 565.0. 566.0. 567.0. 568.0. 569.0. 570.0. 571.0. 572.0. 573.0. 574.0. 575.0. 576.0. 577.0. 578.0. 579.0. 580.0. 581.0. 582.0. 583.0. 584.0. 585.0. 586.0. 587.0. 588.0. 589.0. 590.0. 591.0. 592.0. 593.0. 594.0. 595.0. 596.0. 597.0. 598.0. 599.0. 600.0. 601.0. 602.0. 603.0. 604.0. 605.0. 606.0

2000

Test Hole Numbering System

Centerline of dam
Borrow area
Emergency spillway
Centerline of outlet structure
Stream channel
Left of dam

NOTE: 5 - QUANTITATIVE SYSTEM CODES

GM 500 Gravelly; gravel-sand-silt mixtures
 501 Silty; silt v. fine sand, sandy or clayey, silty

420 01 51302

SAMPLE

25 Insured

کتابخانه ملی افغانستان

Number of blows required for 1-ft. standard penetration test, using 140 lb. S.M. barrel sampler, 14 lb. hammer, and 30" drop. ASTM D 1586.

--- 3. Depth in hole (ft.)
 C1 Unified Soil Classification Symbol
 --- 12.0

KS Cutter bit to advance hole by least boring
--- 17.0 "extra hole
NI - on core, 2-1/8" diameter
73% Percent wear core recovery in each drill

50%

9% Ls Bedrock exposed

[illegible]

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BR
WATERSHED PROJECT
LOSS OF TEST HOLES
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

EX-100

20.2